

INDIAN TARIFF BOARD

Written and Oral Evidence

recorded during enquiry on the

GRANT OF PROTECTION TO THE

**PAPER AND PAPER PULP
INDUSTRIES**

Volume I

सत्यमेव जयते



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TABLE OF CONTENTS.

	PAGE
1. Government of India, Department of Commerce, Resolution No. 202-T. (26), dated the 26th March, 1931	1
2. Press Communiqué issued by the Tariff Board on the 30th March, 1931	2
3. Letter dated the 13th May, 1931, to certain Paper Manufacturing Companies forwarding copies of questionnaire	3
4. India Paper Pulp Company, Limited, Calcutta—	

A.—WRITTEN.

(1) Letter dated the 27th April, 1931, submitting representation	11
(2) Letter dated the 16th June, 1931, forwarding replies to questionnaire	17
(3) Letter dated the 4th July, 1931, forwarding statement showing production during the years 1924-25 to 1930-31	76
(4) Letter from the Tariff Board, No. 386/P.-4, dated the 1st July, 1931, forwarding supplementary questionnaire	78
(5) Letter dated the 7th July, 1931, forwarding further replies to questionnaire	78
(6) Letter dated the 21st July, 1931, forwarding replies to the supplementary questionnaire	83
(7) Letter dated the 6th August, 1931, forwarding certain corrections in calculation in the replies to questionnaire . .	94
(8) Letter dated the 7th August, 1931, forwarding particulars of the works cost for the conversion of bone dry unbleached pulp into paper	95
(9) Letter dated the 7th August, 1931, forwarding statement showing production since 1923-24	99
(10) Letter dated the 12th August, 1931, submitting note on the available supplies of bamboo from Assam and the Chittagong Hill Tracts	101
(11) Letter from the Tariff Board, No. 496, dated the 10th August, 1931, asking for information regarding the capacity in terms of raw bamboo of the crusher used by the company	103
(12) Letter dated the 13th August, 1931, in reply to the above letter	103
(13) Letter dated the 13th August, 1931, submitting particulars of average works cost and average net selling price	103

B.—ORAL.

Evidence tendered on the 1st August, 1931	105
5. The Titagbur Paper Mills Company, Limited, Calcutta—	

A.—WRITTEN.

(1) Representation dated the 27th April, 1931	151
(2) Letter dated the 15th June, 1931, forwarding replies to the questionnaire	161
(3) Letter dated the 15th June, 1931, submitting a note in regard to the projected scheme for a Bamboo Pulp Mill at or near Cuttack	203

	PAGE
5. The Titaghur Paper Mills Company, Limited, Calcutta— <i>contd.</i>	
A.—WRITTEN— <i>contd.</i>	
(4) Letter dated the 8th July, 1931, showing production of protective classes of papers for the years 1924-25 to 1930-31	297
(5) Letter from the Tariff Board, No. 387, dated the 1st July, 1931, forwarding supplementary questionnaire	297
(6) Letter dated the 21st July, 1931, submitting replies to supplementary questionnaire	298
(7) Letter dated the 23rd July, 1931, regarding the mechanical contents in paper	306
(8) Letter dated the 5th August, 1931, regarding effect of the proposals on the vernacular Press	306
(9) Letter dated the 8th August, 1931, forwarding certain explanatory notes on questions arising during the oral examination	308
(10) Letter dated the 11th August, 1931, submitting information regarding the imports of protected kinds of paper during 1928-29	325
(11) Letter dated the 12th August, 1931, submitting explanatory note regarding the comparative cost statements furnished by the Company	328
(12) Letter dated the 12th August, 1931, submitting particulars regarding the crushing plant of the Company	331
(13) Letter dated the 18th August, 1931, forwarding figures showing average weighted works costs f.o.r. Mills and the sales realisations during the past 5 years	332
(14) Letter dated the 20th August, 1931, forwarding statement showing production since 1923-24	332
(15) Letter dated the 21st August, 1931, supplying correct figures in place of those given during oral evidence	333
(16) Letter dated the 21st August, 1931, regarding efficiency due to improvement of the Mill working since 1924-25	333
B.—ORAL.	
Evidence recorded on the 2nd August, 1931	336
6 Bengal Paper Mill Company, Limited, Calcutta—	
A.—WRITTEN.	
(1) Representation dated the 27th April, 1931	395
(2) Replies to questionnaire dated the 20th June, 1931	396
(3) Letter dated the 4th July, 1931, forwarding particulars regarding papers manufactured by the Company during the past 7 years	428
(4) Letter from the Tariff Board, No. 388, dated the 1st July, 1931, forwarding supplementary questionnaire	428
(5) Letter dated the 20th July, 1931, submitting replies to the supplementary questionnaire	429
(6) Letter dated the 12th August, 1931, submitting further particulars on points raised during the oral evidence	432
(7) Letter dated the 5th September, 1931, regarding dividends paid by the Company	433
B.—ORAL.	
Evidence recorded on the 4th August, 1931	434

7. Upper India Couper Paper Mills Company, Limited, Lucknow—

A.—WRITTEN.

(1) Representation dated the 1st May, 1931	465
(2) Letter dated the 20th June, 1931, forwarding replies to the questionnaire	466
(3) Letter dated the 10th July, 1931, forwarding further statements in continuation of the previous letter	486
(4) Letter dated the 18th July, 1931, forwarding statement showing paper manufactured by the Company during the years 1924 to 1930	491
(5) Letter dated the 20th August, 1931, submitting further particulars on points raised during the oral evidence	492

B.—ORAL.

Evidence recorded on the 25th July, 1931	498
--	-----

8. The Deccan Paper Mills Company, Limited, Bombay—

A.—WRITTEN.

(1) Representation dated the 30th April, 1931	530
(2) Letter dated the 6th July, 1931, forwarding replies to the questionnaire	534
(3) Letter dated the 17th September, 1931, submitting supplementary information	563

B.—ORAL.

Evidence recorded on the 30th August, 1931	564
--	-----

9. Andhra Paper Mills Company, Limited, Rajahmundry—

A.—WRITTEN.

(1) Representation dated the 9th May, 1931	589
(2) Letter dated the 30th June, 1931, forwarding replies to the questionnaire	591
(3) Letter dated the 23rd July, 1931, regarding available supplies of bamboo	610
(4) Letter dated the 31st July, 1931, submitting cost statement	613

B.—ORAL.

Evidence recorded on the 5th August, 1931	615
---	-----

10. Punjab Pulp and Paper Mill, Limited, Lahore—

Letter dated the 14th August, 1931, from Mr. Kashi Ram, late Director, Messrs. Carey and Company, Limited, Managing Agents of the Mill, regarding the present condition of the Mill	640
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GOVERNMENT OF INDIA.

DEPARTMENT OF COMMERCE.

New Delhi, the 26th March 1931.

RESOLUTION.

TARIFFS.

Under the Bamboo Paper Industry (Protection) Act, 1925, protective duties were imposed on certain kinds of paper in order to develop the manufacture in India of paper from bamboo. These duties will expire on the 31st March 1932, and before that date it is necessary that an enquiry should be held in order to ascertain how far the Act has achieved its purpose and whether the continuance of protective measures beyond that date is desirable. The Tariff Board is therefore requested to examine the question and to consider what protective measures (if any) should be continued after the 31st March 1932. In making its recommendations the Tariff Board will take all relevant considerations into account including that stated in part (b) of the Resolution adopted by the Legislative Assembly on the 16th February 1923.

2. Firms or persons interested in the paper-making industry or in industries dependent on the use of paper who desire that their views should be considered by the Tariff Board should address their representations to the Secretary to the Board.

3. The Government of India hope that the Tariff Board will be able to submit their Report by the 15th October 1931.

ORDER.—Ordered that a copy of the above Resolution be communicated to all local Governments and Administrations, all Departments of the Government of India, the Central Board of Revenue, the Director General of Commercial Intelligence and Statistics, the Indian Trade Commissioner, London, the Secretary, Tariff Board, His Majesty's Trade Commissioner in India, all Chambers of Commerce and Associations, the Canadian Government Trade Commissioner in India and Secretary, Imperial Council of Agricultural Research.

Ordered also that it be published in the *Gazette of India*.

J. C. B. DRAKE,

Joint Secretary to the Government of India.

Press Communiqué issued by the Tariff Board on the 30th March 1931.

The Government of India have referred to the Tariff Board the question of the continuance of the protective duties imposed under the Bamboo Paper Industry (Protection) Act, 1925 and of how far the Act has achieved its purpose. The terms of the resolution, No. 202-T (26), dated 26th March 1931, are as follows:—

“ Under the Bamboo Paper Industry (Protection) Act, 1925, protective duties were imposed on certain kinds of paper in order to develop the manufacture in India of paper from bamboo. These duties will expire on the 31st March 1932, and before that date it is necessary that an enquiry should be held in order to ascertain how far the Act has achieved its purpose and whether the continuance of protective measures beyond that date is desirable. The Tariff Board is therefore requested to examine the question and to consider what protective measures (if any) should be continued after the 31st March 1932. In making its recommendations the Tariff Board will take all relevant considerations into account including that stated in part (b) of the Resolution adopted by the Legislative Assembly on the 16th February 1923.

Firms or persons interested in the paper-making industry or in industries dependent on the use of paper who desire that their views should be considered by the Tariff Board should address their representations to the Secretary to the Board.

The Government of India hope that the Tariff Board will be able to submit their Report by the 15th October 1931.”

2. Firms or persons interested in the Enquiry should submit written representations embodying such views as they wish the Board to take into consideration not later than 1st May 1931, to the Secretary, Indian Tariff Board, Ootacamund.

Letter No. 258, dated the 13th May, 1931, from the Secretary, Tariff Board, to the Deccan Paper Mills Co., Ltd., Bombay/India Paper Pulp Company, Limited, Calcutta/the Bengal Paper Mill Company, Limited, Calcutta/the Titaghur Paper Mills Company, Limited, Calcutta/Upper India Couper Paper Mill Company, Limited, Lucknow/the Andhra Paper Mills Company, Limited, Rajahmundry.

I have the honour to forward herewith a copy of the questionnaire for manufacturers. I should be glad if you would let me have your replies together with five spare copies not later than June 20th.

2. I would particularly draw your attention to two points. The replies should be as full as possible as regards both actual information and reasons for opinions put forward. The Board has on occasion received replies in a bare affirmative or negative and this has necessitated further correspondence and lengthy examinations.

3. The second point is with regard to questions Nos. 9 and 47 to 49 inclusive. It is of the utmost importance that the Board should be furnished with the fullest possible details regarding costs. Without such details it is not possible for the Board to appreciate with any exactitude the comparative positions of the imported article and the Indian manufactured article. It is the practice of the Board to publish, together with its Report, all evidence received whether written or oral and all the Board's examinations are conducted in public. In some cases manufacturers have requested the Board to keep their costs of production confidential. While appreciating the desire of any particular manufacturer not to supply useful information to a rival firm the Board would stress the view that its proceedings are in the interest of the country as a whole and wherever possible it desires that full publicity should be given to them. The full and detailed costs must in any case be placed before the Government of India for consideration together with the Report, but if specifically requested the Board is prepared to keep them confidential until opportunity has arisen for a full discussion of the point.

4. Certain of the questions, *e.g.*, Nos. 7, 8, 26, 27 refer to evidence given at the previous enquiry by the Board. If no evidence was tendered by you at that enquiry, it is requested that you should give in your replies to those questions all the information and particulars at your disposal regarding the points raised therein so that the Board may have a complete and connected account of your position.

PAPER ENQUIRY.

Questionnaire for Manufacturers.

1. Please state—

- (a) whether your concern is a public or private registered Company or an unregistered firm;
- (b) if registered, whether it is registered in India or abroad and whether the capital is rupee or sterling capital;
- (c) the proportion of Indian shareholders in the company and the shares held by Indians;
- (d) the extent to which Indians are represented on the Directorate and in the superior management of the company.

Please specify the changes, if any, which have occurred in these respects since 1923-24.

2. What is the total capacity of your mills as at present equipped for the manufacture of (a) pulp and (b) paper?

3. What has been the actual output of the mills for each year since 1923-24 of (a) pulp and (b) paper?

4. Enumerate the chief classes of paper manufactured in your mills. What is the average percentage of the total output which each represents?

5. What has been your annual consumption since 1923-24 of each of the primary materials (*e.g.*, grass, bamboo, imported pulp, rags, etc.) required for the manufacture of paper?

6. What is your estimate, according to recent experience, of the quantity of each of the primary materials required for one ton of (a) pulp and (b) paper?

7. Have you any reason to vary your opinion, as expressed at the last Tariff Board enquiry, regarding the total quantities available of your primary materials and their suitability for the manufacture of paper?

8. Has there been any substantial change since 1923-24 as regards (a) the sources from which your primary materials are drawn, (b) the methods of collection and transport, (c) the terms of your concessions.

9. Please give for each year since 1923-24 the cost per ton delivered at the mill of the primary materials under the following heads:—

- (a) Cutting, carting and baling.
- (b) Railway freight.
- (c) Rent or Royalty.
- (d) Other charges.

10. Have the present rates of railway freight on coal, grass and other materials caused any special hardship to the industry? If so, please give particulars and state whether you have taken any action in the matter.

11. Please furnish a detailed statement of the progress made by your Company in the manufacture of pulp and paper from bamboo and the precise results of the experiments, if any, undertaken by you in respect of it. The statement should deal specially with the following points:—

- (a) The possibility of manufacturing pulp economically from bamboo by the sulphite process or by the soda process with fractional digestion or other processes.
- (b) The cost at which bamboo can be delivered at the mill.
- (c) The extent to which coal consumption can be reduced.
- (d) The extent to which the cost of chemicals can be reduced.

- (e) The possibility of improving the quality of paper produced.
- (f) Modifications in plant and machinery required specially for the manufacture of bamboo pulp which have been either (i) undertaken or (ii) proposed.
- (g) The total expenditure incurred or likely to be incurred on such modifications.
- (h) The total capacity of the mill for the production of bamboo pulp.
- (i) The total output of bamboo pulp for each year since 1923-24.
- (j) The provision for increased supplies of raw bamboo.

(N.B.—It was stated on behalf of Government during the debate in the Legislature on the Bamboo Paper Industry (Protection) Bill, 1925, that if none of the interests concerned in the manufacture of paper made serious attempts to develop the production of bamboo pulp within a reasonable time, Government would be free to propose that protection should be withdrawn. In view of the great importance attached by Government and the Legislature to this aspect of the enquiry it is requested that manufacturers will supply the Board with as complete and accurate a statement as possible of the facts regarding the development of bamboo. In framing their main recommendations in this enquiry the Board will be largely guided by the information supplied in answer to this question.)

12. Please state the quantity of each kind of foreign pulp imported by you during each year since 1923-24. From what countries have you imported it and at what prices? If possible please give—

- (1) F.o.b. price per ton.
- (2) Port of importation.
- (3) Freight, insurance, etc.
- (4) Landing charges, etc.
- (5) Transport charges to mill.

Please state the class or classes of pulp for which prices are given.

13. If the figures show an increase in the quantity of pulp imported, please explain the reasons for such increase.

14. Is a minimum quantity of imported pulp required in your mills? If so, please state the minimum quantity required and the purposes for which you need it.

15. If there has been any variation in the price of wood pulp please explain the reasons for the variation. What do you estimate to be the probable trend of prices during the next few years?

16. Please give a brief account of the progress made by you since 1923-24 in the manufacture of paper from indigenous materials other than bamboo under the following heads:—(a) cost, (b) quality, (c) output.

17. According to your present practice what is the quantity of each of the chief auxiliary materials required per ton of finished paper? Please state also the price of each. (By 'auxiliary materials' are meant all materials other than the primary materials and imported pulp.)

18. As compared with the position in 1924 are the auxiliary materials more readily available in India at present? To what extent have you obtained increased supplies in India?

19. Please fill up Form No. III annexed to the questionnaire regarding the consumption in your mills of the chief primary and auxiliary materials.

20. Please state the total labour force employed by you during each of the past seven years—

- (a) in extracting and collecting the primary materials;
- (b) in the mills.

21. Please state the total wages bill in each year for each of the above groups of labour.

22. What progress has been made since 1923-24 in the substitution of Indian for imported labour and in the facilities given to Indian workmen to acquire training in skilled work? Please give details.

23. What arrangements have you made for housing your labour and for promoting its welfare in other directions?

24. Please state fully the changes, if any, which have occurred since the last Tariff Board enquiry in the arrangements for the supply of power in your mills—especially as regards (a) source of power, (b) cost and (c) consumption per unit of finished paper.

25. What do you estimate to be at present—

- (1) the total Indian production of paper;
- (2) the total Indian demand

as regards—

- (a) paper of all kinds;
- (b) paper of the kinds which are or are likely to be manufactured in India?

26. Are there any grounds in your opinion for revising the conclusion arrived at by the Tariff Board (see Chapter IV of the Report) at the last enquiry regarding the possibilities of developing a market for Indian made pulp (a) in India and (b) abroad?

27. Are there any grounds in your opinion for reconsidering the question of a protective duty on imported pulp?

28. Please state in respect of those classes of paper which form the bulk of your output the prices at which imported paper which competes with Indian paper has entered the country (the c.i.f. price, landing and other charges and duty to be shown separately).

29. Compare the railway freight paid by importers from the ports to selected upcountry markets and the railway freights paid on the produce of your mill to the same markets.

(N.B.—What is desired is concrete instances giving the name of the port, the names of the upcountry stations, the distances, rates per maund per mile, etc.)

30. Please state, if possible, for each year since 1923-24—

- (1) the price realised by you for each principal class of paper manufactured;
- (2) the average price realised by you for—
 - (a) printing paper,
 - (b) writing paper,
 - (c) paper of all sorts.

(N.B.—The nett price realised *ex-factory* should be given in each case. Please enclose five samples of each class of imported and Indian paper.)

31. Please prepare a statement showing the prices at which during the past five years the products of your mill have been sold at upcountry centres as compared with places in the vicinity of your factory. Do the former generally correspond with the latter if allowance is made for freight to destination? If not, please explain the reasons for the difference.

32. If the price realised by you for any class of paper is higher or lower than the price of the corresponding class of imported paper, please explain the reasons for the difference.

33. Have you any reason to suppose that prices at which foreign producers sell for export to India are unremunerative, i.e., below the cost of production, or leaving only a small margin of profit to the producer? If so, please state fully your reasons and the evidence on which you rely.

34. In which of the Indian markets is foreign competition keenest?
35. Is there any difference in price between bamboo paper and paper made from other indigenous materials? If so, how far is this difference due to quality and how far to other considerations?
36. Has there been any marked variation in the quality of the various classes of paper produced by you since protection was granted? If so, please explain the nature and causes of such variation.
37. To what extent, if any, have you been adversely affected by the application of the existing test for determining 'Newsprint' for Customs purposes? What remedies would you suggest either by way of modifications of the existing test or by other methods?
38. Have you adopted since 1923-24 any new processes of manufacture or installed new plant and machinery in replacement of or in addition to the old plant? If so, give a brief description of them and state whether the results have fulfilled the expectations entertained.
39. Please state the sums spent by you on extension or alterations of plant and machinery since 1923-24 as regards (a) pulp and (b) paper. To what extent was the expenditure under (a) due to the special requirements of bamboo pulp?
40. Do you contemplate any important replacement or extension of the plant? If so, please give particulars.
41. What is the block value of your property, as it stood in your books at the end of the last complete year for which figures are available under the following heads:—
- (a) Leases and concessions,
 - (b) Lands,
 - (c) Buildings,
 - (d) Plant and machinery,
 - (e) Other assets.
42. What do you estimate would be the present day cost under the heads (1) buildings and (2) plant and machinery for erecting a mill having the same capacity as your mill?
43. Please state for each year since 1923-24—
- (1) the amount written-off for depreciation and
 - (2) the amount of Reserve Fund created, if any, either from surplus profits or from other sources.
44. Please prepare a statement showing for each year since 1923-24—
- (a) the amount of the paid up share capital ranking for dividend;
 - (b) the actual amount distributed as dividends on each class of capital;
 - (c) the percentage on the paid up share capital of each class which the dividend represented.
45. Please send copies of your balance sheet for each year since 1923-24.
46. Has the Company raised any debenture loans since 1923-24? If so, at what dates were they issued and what is the rate of interest payable?
47. Please fill up the two forms annexed to the questionnaire regarding works costs. The term "works costs" covers all expenditure on the production of paper other than the following:—
- (1) Interest on working capital;
 - (2) Depreciation;
 - (3) Head office expenses and Agents' commission;
 - (4) Dividends on share capital, and
 - (5) Interest on debenture loans devoted to fixed capital expenditure.

48. Please prepare a statement showing as accurately as possible the works cost in your mills per ton of pulp (a) made from grass, (b) made from bamboo for the last complete year for which figures are available. The costs of primary materials and of auxiliary materials should be shown separately. The method by which the other items in works costs such as (i) Labour, (ii) Power, (iii) Establishment, (iv) Miscellaneous and (v) Other charges have been allocated should be explained. It is important that the kind of pulp for which costs are shown should be comparable in finish and quality with the bulk of imported pulp.

49. Do you consider the works cost of the last year for which figures have been given capable of further reduction? If so, please furnish an estimate of future works costs on the assumption that conditions are normal and that a full output is obtained.

50. Please furnish an estimate of—

- (1) the average value of the stocks of coal, materials and finished goods held by the Company, and
- (2) the average outstanding in respect of goods sold by the Company.

51. Please state the annual amount of the head office expenses and the Managing Agents' commission.

52. It was found by the Tariff Board at the last enquiry that subject to one exception the paper mills using *sabai* grass did not satisfy the conditions laid down by the Fiscal Commission and that the claim to protection depended entirely on the possibility of manufacturing paper from bamboo. In view of this finding, how far do you consider that in the present circumstance of the Paper industry in India a case for the further continuance of protection can be established? Please explain fully the reasons for your opinion.

53. If you consider that protection should be continued, please state (i) in what form, (ii) at what rate, and (iii) on what classes of paper protection should be granted in future. Please explain fully the grounds upon which your answers are based.

सत्यमेव जयते

FORM I.

Total expenditure incurred on the production of paper.

	1924- 25.	1925- 26.	1926- 27.	1927- 28.	1928- 29.	1929- 30.	1930- 31.
1. Primary materials <i>N.B.</i> —Expenditure on each material to be shown separately as well as the quantity of each used.							
2. Imported pulp							
3. Auxiliary materials <i>N.B.</i> —Expenditure on each principal material to be shown separately as well as the quantity of each used.							
4. Mill Labour							
5. Power and fuel							
6. Current repairs and maintenance							
7. Supervision and establishment .							
8. Miscellaneous, rent, Municipal taxes, insurance, etc.							
9. Other items							
Total							
Total output of paper for the year in tons.							

FORM II.

Works cost per ton of finished paper.

	1924- 25.	1925- 26.	1926- 27.	1927- 28.	1928- 29.	1929- 30.	1930- 31.
1. Primary materials <i>N.B.</i> —Expenditure on each material to be shown separately as well as the quantity of each used.							
2. Imported pulp							
3. Auxiliary materials <i>N.B.</i> —Expenditure on each principal material to be shown separately as well as the quantity of each used.							
4. Mill Labour							
5. Power and fuel							
6. Current repairs and maintenance							
7. Supervision and establishment .							
8. Miscellaneous, rent, Municipal taxes, insurance, etc.							
9. Other items							
Total							
Total output of paper for the year in tons.							

FORM III.

	1924- 25.	1925- 26.	1926- 27.	1927- 28.	1928- 29.	1929- 30.	1930- 31.
<i>Grass.</i>	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
(1) Quantity of material used .							
(2) Quantity of finished paper which material represents.							
<i>Bamboo.</i>							
(1) Quantity of material used .							
(2) Quantity of finished paper which material represents.							
<i>Other Local Fibres.</i>							
(1) Quantity of material used .							
(2) Quantity of finished paper which material represents.							
<i>Total indigenous fibres</i>							
(1) Quantity of material used .							
(2) Quantity of finished paper which material represents.							
<i>Imported pulp.</i>							
(1) Quantity of material used .							
(2) Quantity of finished paper which material represents.							
<i>China Clay.</i>							
(1) Quantity of material used .							
(2) Quantity of finished paper which material represents.							
<i>Other Auxiliary materials.</i>							
(1) Quantity of material used .							
(2) Quantity of finished paper which material represents.							
<i>Total</i>							
(1) Quantity of material used .							
(2) Quantity of finished paper .							

India Paper Pulp Company, Limited, Calcutta.

A.—WRITTEN.

(1) *Letter dated 27th April, 1931.*

We have to acknowledge receipt of your letter No. 187, dated the 14th instant, enclosing a copy of the Press Communique issued by the Board. In response to the request contained therein, we now submit our representation, and shall be glad to receive the Board's questionnaire in due course.

1. In the first place, we have to request the Board's attention to our letter, dated the 8th July 1930, addressed to the Joint Secretary, Government of India, Department of Commerce, a copy of which is enclosed herewith for ready reference. The Board's appreciation of the facts set out in that letter is, we venture to submit, a necessary preliminary to the consideration of the views we now desire to represent.

2. Since the above letter was written further progress has been made with the experimental work mentioned therein in relation to the manufacture of pulp and paper from Bamboo, details of which we shall be pleased to supply in due course. Whilst results are perhaps the most encouraging yet achieved, the exploratory work is by no means completed and much remains to be done. If at the expiry of the present Act, no further protection is afforded, it is our opinion, based on prevailing conditions which we shall detail before the Board in our evidence, that there is a grave danger of the Industry ceasing to function, in which case the benefit of past labour and the protection afforded under the present Act will be lost. Therefore to enable full advantage to be taken of the exploratory work now in hand and on which much time and money has been and is still being spent, we consider it essential that protection in the form of Customs Duties be granted to the Industry for a further period.

3. In our original application for protection, we asked for a protective duty on imported pulp. The Board on considering all the evidence concluded this proposal could not be supported and we are aware that some of the reasons on which this decision was based may be found to apply to-day.

On the other hand, the protection of paper without a corresponding protection of pulp creates an anomalous situation under which, for financial and other reasons, pioneer and experimental work is handicapped. We still believe that an increase in the price of foreign pulp is inevitable and what we desire is that the manufacture of bamboo pulp be sufficiently advanced to take advantage of the opportunity when it occurs. For this reason, we ask the Board to re-investigate this matter of national importance and to consider whether the Industry should not only be given the limited protection afforded by the present Act, but that any future form of protective assistance should incorporate some direct encouragement of the basic industry itself, *i.e.*, the manufacture of Bamboo indigenous Pulp.

Enclosure.

INDIA PAPER PULP COMPANY, LIMITED.

Calcutta, dated 8th July, 1930.

The Joint Secretary,
Government of India,
Department of Commerce,
Simla.

BAMBOO PAPER INDUSTRY (PROTECTION) ACT, 1925.

SIR,

We have the honour to acknowledge receipt of your letter No. 202-T. (26) of the 19th May last, containing statistics regarding the production of

paper and the importation of wood pulp into India put forward by firms importing manufactured paper. We are requested to comment on these statements and to give you details of our manufacture and imports during the period that has elapsed since the passing of this Act.

1. In view of the statement put forward and contained in para. 3 (iii) of your letter, we think it will help to elucidate matters if we, in the first instance, briefly review the facts leading up to the position in which our Company found itself placed immediately after the passing of the Protection Act of 1925.

- (a) At the time of the Tariff Board Enquiry 1924, we requested that the Bamboo Pulp Industry be protected as well as the manufacture of paper, by the imposition of a duty on imported pulp.

In referring to our activities the Board in their Report (page 56) stated:—

“What the Company contemplate is that the Industry should supply, in the first instance, the needs of the Indian Mills, and eventually, as costs go down and the price of wood pulp rises, should develop and export trade to all parts of the world.”

- (b) The Board however did not find any evidence which entitled them to say that a large increase in the cost of wood pulp was so imminent that export of bamboo pulp became a possibility of the near future.

The Grass Mills did not admit to the full extent our Company's claim that bamboo pulp was as good as wood pulp for all purposes nor were they prepared to state that if bamboo pulp were available, the importation of wood pulp would be unnecessary.

In view of the above the Board came to the conclusion that the proposal for a protective duty on imported pulp could not be supported and added that a premature investment of capital in pulp mills might entail heavy losses to investors.

- (c) At the same time the Board realised it was essential that the manufacture of bamboo paper should be continued and the exploratory work be completed. To enable this to be done however fresh capital would be necessary and with a limited period of protection, the Board thought it extremely improbable that such capital could be raised in the open market.

The Board proposed therefore that Government should provide our Company with additional capital of Rs. 10 lakhs in order to double the Mill output by the installation of a second paper machine, and of additional plant for pulp production. In the event of the actual cost exceeding this sum, the Board recommended that the promoters of this Company should be responsible for the balance.

- (d) In September 1925, Government passed the Protection Act of 1925 increasing the rate of import duty on certain classes of paper but made no provision for finance, as recommended by the Board to enable the possibilities of the manufacture of paper from Bamboo being fully explored.

2. Our Company was therefore faced with the difficult question of raising funds at a time when it was not only heavily in debt, but when its Profit and Loss Account was showing a debit balance of over Rs. 10 lakhs.

It must be borne in mind that under the Protection Act all Indian Paper Mills received equal protection irrespective of the raw material used, whilst our Company was at a disadvantage vis-avis older Paper Companies with depreciated block accounts and large organisations. These facts had to be considered as, on any expansion, our products would clearly have to be sold under these conditions.

Eventually arrangements were concluded with one of the original promoters for a loan of Rs. 10 lakhs bearing interest at 6½ per cent. per annum.

3. By December 1925 estimates had been received which disclosed that the additional pulp and paper machinery required to double the Mill output would cost at least Rs. 13 lakhs, quite apart from the necessary increased working capital. In view of the Company's financial position and the impossibility of raising further funds, it became necessary to choose between two alternatives, i.e., either to instal paper machinery and leave the pulp plant until results proved successful when finance might be provided out of profits or additional capital raised, or instal the pulp plant, leaving the paper machinery to be provided for later by similar financial possibilities. In view of the fact that imported pulp would not have to bear any protective duty, the installation of pulp machinery alone was considered hazardous and unjustifiable in the interests of the Company and those financially concerned. The sale price of any surplus pulp would entirely depend on the market price of imported pulp, and, as the Tariff Board remarked in their Report, it might easily happen that those who prophesied a shortage in the supply of wood for pulping might be wrong in their forecast of the date by five, ten or even fifteen years. Expenditure on any pulp plant would necessitate the Mill continuing to manufacture paper on one machine only which had been amply proved and admitted to be uneconomical. It followed that instead of reducing the loss, there was practically no doubt that it would increase, and consequently not only would further bamboo exploratory work be impossible, but the Company might have to close down altogether.

It may be argued that the protective paper duty would sufficiently increase the sale price of paper to render a one machine Mill profitable. In reply to such criticism, we would quote from para. 157 of the Tariff Board Report:—

“..... the protection we have proposed falls greatly short of the amount required to make paper making in India profitable under present conditions.”

Before arriving at a decision with these important facts before us, we had also to remember the two-fold interest concerned, i.e.:—

- (1) Those financially interested.
- (2) The reasons for the Tariff Board's recommendation as applied to this Company.

In connection with the latter, the Board said it was very desirable that work already done on bamboo should not be wasted, and that further exploratory work should be encouraged. They desired that the manufacture of paper from bamboo by our process should be continued on a scale sufficient to ascertain its possibilities and to obtain further information on cost problems.

It was obviously impossible for this Company to continue pioneer work as desired unless additional paper machinery was installed to avoid further loss and render the Mill an economic unit. Whilst the financial considerations, which rendered impossible the installation of complete pulp and paper plant, were to be deplored, and whilst every one connected with the Company was greatly disappointed, there was no alternative but to face the facts, and in order to serve the two-fold interests to the best of our ability it was decided to proceed with the erection of new paper making plant.

Contracts were therefore placed early in 1926. The total expenditure was:—

	Rs.	A.	P.
Buildings	1,94,294	0	0
Machinery	7,16,821	2	7
Sundries (Railway Siding, etc.)	7,950	9	5
TOTAL	9,19,065	12	0

By setting out the above facts regarding our Company, its financial problem, and the interests to be considered in arriving at our decision it becomes evident that there was no alternative but to increase our imports of wood pulp during the period under review.

4. The imports of wood pulp set out in para. 3 (iii) of your letter are required for our plant as reconstructed and as requested. We give below details of yearly wood pulp consumption from 1925-26 to 1929-30. We also give details of bamboo consumption over the same period and would like to mention that the bamboo consumption for 1926-27 was lower owing to the removal of all the bamboo washing and straining plant to a new site. Similarly the consumption for 1927-28 was affected by reason of our being handicapped with starting up of the new and the adjusting of the old plant. In 1928-29 experimental work with our crushing machinery (as described later on in this letter) interfered with continuous running and at the present time, this still obtains. Our figures show that despite the frequent shutting down of our crushing plant due to alterations and experimental work, our bamboo consumption has been only slightly affected:—

Year.	Wood Pulp.	Bamboo.	Paper made.
	Tons.	Tons.	Tons.
1925-26	736	4,183	2,377
1926-27	1,161	3,437	2,585
1927-28	3,031	3,459	4,358
1928-29	4,498	3,792	5,891
1929-30	4,392	3,975	6,056

The continuance of our Company has only been possible by reason of **the increased output; nevertheless the Profit and Loss Account shows a loss of just under Rs. 11 lakhs**, the shareholders have received no dividend whatsoever since the incorporation of the Company in 1918, and the Company is still in debt.

5. Paper was manufactured for the first time on our new machine in July 1927 so that including some delay which was experienced owing to the Home Coal Strike of 1926, the erection of this plant took approximately 18 months. During this period our staff was fully occupied and also for some time afterwards until the Mill had settled down to the new conditions and necessary reorganisation.

Since 1928 however it has been possible to carry on the exploratory work in connection with bamboo and we are pleased to give you the following details:—

The main and most important experimental work has been an endeavour to improve our bamboo crushing machinery. From the considerable experience gained up to that date we recognised that, to a very large extent, improvement in the quality of our bamboo pulp, the output of our digesters, reduction in the cost of chemicals, and other technical problems could most probably be solved if consistently regular and thoroughly disintegrated bamboo, entirely free from hard sections, could be obtained.

Messrs. Nelson and Mr. J. L. Jardine of Edinburgh have worked unceasingly on the problem and have spent a lot of time, thought and money on experimental work with trial plants.

Early in 1928, Mr. Gray of James Bertram & Son Ltd., Edinburgh, who supplied most of our machinery, visited India and spent some time at our Mill studying the crushing plant.

On his return, in consultation with Messrs. Nelson he designed new plant incorporating his latest ideas. After we had considered his proposals and plans, new machinery was ordered in August 1928. It was hoped that given thoroughly disintegrated bamboo from this plant, the output per digester and the reduction in the cost of chemicals would make very material economies in the cost of bamboo pulp and justify the authorisation of reasonable capital expenditure for further plant.

The new machinery was received in February 1929 and after being fitted was in operation by the end of July 1929 when continuous and exhaustive tests were made and experiments carried out. To our regret the results were disappointing and although some improvement was found in the bamboo crushed, the plant failed to fulfil expectations, whilst important parts showed distinct signs of undue wear. We can say however that some small advantage was gained by the benefit of cleaner pulp and an almost entire absence of bad "cooks", which demonstrated that our efforts in endeavouring to solve this problem were in the right direction.

Advantage was taken of the presence of our Manager on Home leave during 1929 and in consultation with Messrs. Nelson, the whole position was again thoroughly examined in the light of all the experience and tests made up to that date. Further experiments were tried out with a different design of plant, and, as a result, two machines were ordered which arrived here early this year. From experiments made we can definitely state that in our opinion, on this occasion, a considerable step in improved crushed bamboo has been achieved. The possibility of increased digester output has been tested and is in sight and we are very hopeful, on the strength of the results, that we shall shortly be able to increase our bamboo pulp production. Much has yet to be done however and further plant in other sections of the Mill will be necessary to deal with the altered conditions as progress is made.

In this connection, another machine ordered sometime ago, is shortly expected and experiments will then be carried out with the altered conditions and endeavours made to obtain definite proof of the possibility of increased digester output and also to improve quality. Further to this, our Assistant Manager is now in England and we have just received a request for a 50-lb. sample of our crushed bamboo in order that he may carry out certain experiments with the assistance of a firm who manufacture a special type of machine. The nature of these experiments and the difficulties under which they have to be tried out in this country naturally demand much time. In addition, the breakdown or normal overhaul of any portion of our ordinary plant which may be connected with our experiments, only interrupts and prolongs same but this cannot be avoided.

We would welcome an opportunity of demonstrating the exploratory work which is being carried on by us at our Mill, should any Government official be able to pay us a visit. Obviously much more detail can be verbally explained in connection with this matter than is possible for us to adequately express in any letter.

6. Concurrently with the Mill exploratory work, questions in relation to the supply of bamboo itself have been thoroughly investigated and experiments are being carried out. It is known that Messrs. Nelsons have successfully developed plantation bamboo in Trinidad. In order to give proper consideration to such development in India on a commercial basis, Mr. G. D. Smooker, who has had charge of the work in Trinidad, visited India at our expense in 1929. To enable him to prepare for this visit, a considerable amount of information on subjects such as locality, temperature, rainfall, soils, species, etc., etc., was collected and forwarded to Mr. Smooker in 1928.

Mr. Smooker arrived in India in February 1929 and he subsequently visited various localities investigating conditions and possibilities. As a result and in order to test the latter, two experimental sites were procured and prepared for planting a number of species by various methods as advised by Mr. Smooker. One of these sites consists of about 3 acres of level ground not far from Calcutta and is particularly free from trees. The other site is approximately double this area, about a hundred miles away from Calcutta and is covered with a heavy growth of *sal* trees. Both sites have been fenced with cattle-proof fencing surmounted by barbed wire to keep out villagers. The areas have been divided up into a number of small plots. These have been given a distinguishing letter and number, the former representing a separate method of planting and the latter the different species of bamboo.

Planting was carried out in July 1929, and a permanent record has been kept in which the growth of each plant is noted individually, together with general observations on each species as a whole and on the various methods of planting. By keeping a detailed record of this kind it will be possible to ensure, as far as practicable, that no information which may subsequently be of value will fail to be recorded.

Malis are maintained at each site and these men keep the plants clean and prevent undergrowth from interfering with their progress. They have also been taught how to take readings from the rain-gauges which have been provided at each plantation. At regular intervals the sites are visited by our Forest Advisor, who prepares the records and keeps them up to date.

The whole of the planting has been carried out according to the suggestions made by Mr. Smooker and his instructions have been submitted to our Forest Advisor and are carefully followed. Copies of the records have been forwarded to Mr. Smooker and we shall continue to receive the benefit of his advice on this interesting and important experiment.

We shall be pleased to show any Government official these experimental plantations together with our records.

7. On the remaining portions of your letter, we have the honour to make the following comments:—

- (a) With reference to your para. 3 (2). In the absence of information regarding the production of other paper mills in India we are unable to say whether the figures given in your para. are correct or not.
- (b) With reference to the statement made at the end of your para. 3 (iii) that we are "unable to secure for our product a price equal to that obtained by the grass mill", we have to state that whilst this is both true and untrue, as we shall explain, the question of price is not in our opinion governed by the raw material used nor altogether by the class of paper produced but is a matter of Mill policy and other conditions. It must be remembered that in our bazar business we are handicapped by reason of the fact that we do not manufacture the whole range of papers required by the bazar whereas these are manufactured by and obtainable from the larger Mills with whom we have to compete. The larger productions and organisations as well as the long-established agencies of the latter mills are also factors which undoubtedly bear on this question of price. It is not surprising in the circumstances that in order to encourage bazar dealers to come to us for such part of their requirements as we are able to supply, it is necessary for us to offer sufficient inducement and facilities to enable us to sell our goods and maintain our output. On the other hand however in cases where such inducements are unnecessary the Mill can indisputably hold its own in the matter of price. We can quote no better illustration of this than our supplies of paper to the Government of India on past and present contracts secured by us through the Controller of Printing and Stationery. We give below details of the items contracted for by us for the current year which show that not only were we entrusted with the manufacture of practically all the highest classes of papers included in the tender but that we were successful on equal prices which were quoted by competing Mills.

	Tons.	Per lb. As. P.
Cream Laid	80	3 10
Azure Laid	300	4 ½
Cream Wove	250	3 10
White Cartridge	50	3 6½
White Printing	1,000	3 6
Unbleached Printing	150	3 5
Duplicating	40	4 1½

- (c) With regard to your para. 3 (iv) the statement that less Indian labour has been employed in the industry than before protection was given remains to be dealt with. So far as we are concerned, taking the month of May last, as compared with May 1925, the wages paid for Indian Mill labour (excluding office staff) is 57.58 per cent. greater. The extension of our plant has naturally resulted in an increased Indian labour force.

8. In conclusion we would like to mention that early this year evidence came into our possession regarding preparations being made by Paper Manufacturers in the United Kingdom as well as by those interested in paper imports into this country for an active campaign to secure the re-adjustment of the situation created by the existing tariff and to prevent any extension of the present Act being granted. In consequence we have no doubt that the representations mentioned in your letter as having been received by Government are the result of the propaganda and we therefore welcome the opportunity which has thus been afforded to us of placing before Government the foregoing explanation of our position and the details of our efforts made in the further investigation into the manufacture of pulp and paper from bamboo. We trust the particulars we have given will be sufficient to entirely eliminate the inference which might be drawn from the representations above mentioned that our Company has deliberately chosen to abuse the Act. We wish to emphatically deny any such deduction; our imports of wood pulp during the period under review were necessary means without which it would have been impossible for our Company to continue to carry out the object laid down on the imposition of the protective duty.

We have the honour to be,

SIR,

Your most obedient servants,

ANDREW YULE & CO., LTD.,
J. H. S. RICHARDSON, } Secretaries.
Managing Director.

- (2) *Letter dated the 16th June, 1931, from India Paper Pulp Company, Limited.*

We are to-day sending you under separate cover by registered post six printed copies of our answers to the Board's Questionnaire and shall be obliged if you will kindly acknowledge receipt.

Enclosure.

Replies to the questionnaire issued by the Indian Tariff Board, June, 1931.

1. The India Paper Pulp Company, Limited, is a private registered Company, and its position with regard to this question is exactly the same as stated in our evidence given at the Inquiry in 1924.

2. (a) The average consumption of Bamboo during the years 1924-25 to 1930-31 inclusive was 331 tons per month. Taking the yield of dry pulp obtained from bamboo as 44 per cent., this is equivalent to a production of 145.6 tons of bamboo pulp per month. Our pulp plant has not however been worked to its full capacity during the period on account of the experimental work which has been carried out.

The full capacity of the plant is approximately 200 tons per month.

(b) The average monthly production of paper in our Mill for the period of three years ended 31st March, 1931, was 503.8 tons. This figure may be taken as representing its full capacity for paper as at present equipped.

3. Our output during the past seven years has been as follows:—

	(a) Production of dry pulp at 44% yield from bamboo (tons).	(b) Production of paper (tons).
1924-25	2,035	2,545
1925-26	1,821	2,378
1926-27	1,512	2,586
1927-28	1,522	4,358
1928-29	1,656	5,892
1929-30	1,732	6,056
1930-31	1,965	6,188
Total	12,243	30,003

4. The chief classes of paper manufactured in our mills are machine finished writings and printings. The following table shows the total quantity of each kind of paper produced by us during the years 1924-25 to 1930-31 inclusive together with the percentage of the total represented by each.

Analysis of Production of Paper.

	Quantity tons.	% of whole.
<i>Bleached Writing and Drawing Papers—</i>		
Cream Laid	8,594	28.65
Cream Wove	1,149	3.83
Azure Laid	1,043	3.48
Account Book	1,553	5.18
White Cartridge	181	0.60
Other Sorts	6	0.02
Total Bleached Writing and Drawing Papers	12,526	41.76
<i>Bleached Printing Papers—</i>		
White Printing	12,113	40.38
Antique Laid and Wove	752	2.51
Coloured Printing	80	0.26
Duplicating	157	0.53
Superior Badami	503	1.67
Total Bleached Printing Papers	13,605	45.35
<i>Bleached Papers other than Printing, Writing and Drawing Papers—</i>		
Blotting	425	1.42
White and Coloured Board	295	0.98
Other Sorts	7	0.02
Total Bleached other than Printing, Writing and Drawing Papers	727	2.42

	Quantity tons.	% of whole.
<i>Unbleached Papers—</i>		
Unbleached Printing	1,057	3.52
Common Badami	1,307	4.36
Brown Wrapping Paper	3	0.01
Total Unbleached Papers	2,367	7.89
Wrapper for own use in packing paper	778	2.58
GRAND TOTAL	30,003	100.00
<i>Summary.</i>		
Writing and Drawing Papers	12,526	41.76
Printing Papers	15,969	53.23
Other sorts	730	2.43
Wrapper for own use	778	2.58
	30,003	100.00

5. The annual consumption in our mills of primary material during the past seven years has been as follows:—

	Bamboo.	Wood pulp.	Paper cuttings.
1924-25	4,625.8	622.4	—
1925-26	4,137.5	738.8	13.4
1926-27	3,436.8	1,161.2	14.2
1927-28	3,459.9	3,031.8	23.9
1928-29	3,762.8	4,499.0	20.2
1929-30	3,935.8	4,382.4	173.8
1930-31	4,465.9	4,535.9	182.8
Total tons	27,824.5	18,971.5	428.3

6. According to our experience we estimate the yield of Dry Pulp from Bamboo at 44 per cent. and of Paper at 42 per cent. It should be noted that pulp is sold commercially on a basis of 90 per cent. Dry Pulp and 10 per cent. moisture. On this basis the yield of commercial pulp from bamboo would be about 49 per cent.

Applying the above to our consumption of wood pulp and bamboo for the years 1926-27 to 1930-31, inclusive, as shown in Form III, we obtain the following results:—

(a) Bamboo consumed 19,062 tons at 42 per cent. equals 8,006 tons Paper.

(b) Commercial Wood Pulp consumed was 17,610 tons and this contained 10 per cent. moisture leaving 15,849 tons dry pulp. We

have above shown that we estimate the relative yields for dry pulp and paper from bamboo as 44 per cent. and 42 per cent., respectively, this representing a loss of $\frac{2}{3}$ or approximately 41 per cent. between these two stages. If we apply this percentage of loss to 15,849 tons dry wood pulp we obtain 15,136 tons paper. That is to say the yield from 17,610 tons commercial wood pulp is 15,136 tons (representing a yield of about 86 per cent.).

- (c) Actual production of paper for the period was 25,080 tons. Of this 8,006 and 15,136 tons have been shown as derived from bamboo and wood pulp respectively, leaving a balance of 1,938 tons to be otherwise accounted for.

We estimate this balance to have been made up approximately as follows:—

	Tons.
China Clay 1,933 tons @ 75 per cent.	1,450
Paper cuttings 415 tons @ 80 per cent.	332
Alum, Rosin, etc., etc.	156
	<hr/>
Total	1,938

A yield of 42 per cent. means that 2.38 tons bamboo are required for 1 ton finished paper (without loading).

A yield of 44 per cent. means that 2.27 tons bamboo are required for 1 ton dry Pulp.

A yield of 49 per cent. means that 2.04 tons bamboo are required for 1 ton Commercial Pulp containing 10 per cent. moisture.

7. We have no reason to vary our opinion as expressed at the last inquiry regarding the total quantities of bamboo available and of their suitability for the manufacture of paper. The vast areas of natural bamboo forest are sufficient to maintain an industry of far greater size than can possibly develop under the most favourable circumstances for many years to come.

As regards the suitability of bamboo as a raw material for the manufacture of paper we have now been using bamboo on a commercial scale for about 9 years, and our experience is that this material is entirely suitable for the manufacture of practically all the varieties of paper in common use in India, with the possible exception of mechanical and Kraft papers regarding which we have no experience.

8. (a) *Source of Bamboo Supply.*—Previous to 1924-25, the main source of supply was the Kasalong Reserve in the Chittagong Hill Tracts leased by Government to the Company. A certain quantity was however purchased from contractors in the Cachar and Sylhet districts of Assam, and it was found that these supplies proved cheaper. It was accordingly decided in 1925 to abandon direct working of the Kasalong Reserve for the time being, and obtain our requirements through contractors in Sylhet, Cachar, and Chittagong, at the same time retaining the Company's right to work the Reserve direct at any time should it be considered advisable.

After this alteration was made it proved possible to purchase part of our requirements from Chittagong through contractors at lower rates, and recently supplies have been obtained at approximately the same cost as from Assam.

We are now considering the possibility of obtaining our bamboo supplies from forests in Bihar and Orissa and trial quantities have been obtained. In this connexion we may say that in 1926 when we approached the Bengal Nagpur and East Indian Railways for concession rates on bamboo from Chota Nagpur and Baltanganj areas respectively, the freight rates quoted were

not appreciably lower than those prevailing at the time for bamboo from stations in Assam. Recently however we have been quoted reduced rates which have altered the position and we are accordingly investigating these areas as possible sources of supply.

(b) There has been no change in the method of collection of bamboo since 1923-24. The transport used is also similar with the exception that the traffic is now carried entirely by rail from the despatching station to Naihati, by the Assam Bengal Railway and the Eastern Bengal Railway *via* Mymensingh and Santahar, instead of as previously by these two Companies in conjunction with the Rivers Steam Navigation Co., Ltd., and the India General Navigation and Railway Co., Ltd., *via* Chandpur and Khulna. The reason for this is that in 1929 the two steamship companies notified us of their intention of making a substantial increase in their share of the transport rates. This led to negotiations with the Railway Companies, whereby, for a relatively small increase in the rate, the route was altered and the services of the Steamship Companies were no longer required.

It may be mentioned that the present method of transport is more satisfactory to both the Company and its contractors than the previous method, the principal advantages of the new route being that the time of transit is reduced from 3/4 weeks to 4/5 days, and that a single transshipment at Santahar, carried out under more favourable conditions than the previous two transshipments at Chandpur and Khulna, reduces the confusion caused by supplies from different contractors becoming mixed before arrival at the mill.

(c) Our temporary withdrawal from direct working of the Kasalong Reserve led to negotiations with the Government of Bengal, whereby a subsidiary agreement was made between Government and the Company, a copy of which is attached. The original lease to which reference is made in this agreement was placed by us before the Board in 1924, and is printed on pages 493 to 497 of Volume I of the evidence published in that year.

9. We attach a statement (A at end) showing the cost per ton of bamboo delivered at our Mill since 1923-24.

Our supplies of bamboo are now purchased from contractors at an inclusive rate delivered free at our Mill. We are not therefore in a position to give exact figures from our own knowledge for cutting, carting and rafting or for baling. We have, however, discussed the question fully with our Forest Manager and obtained detailed figures from some of our bamboo contractors. Opinions and figures obtained independently in this way agreed extremely closely and the figures we have given under these heads for the years 1927-28 to 1929-30 may be taken as substantially accurate at the present day. We also believe that there has been no appreciable change in these costs during the period under review.

Our figures for railway freight are exact, as consignments are sent freight to pay and the actual freight as paid by us is deducted from the contractors' bills for supplies.

Rent and Royalty are paid by our contractors and vary in different districts. Our Forest Manager, who has toured the bamboo areas extensively, informs us however that Rs. 10 per 1,000 stems may be taken as an average figure for the various forest areas. He also informs us that 3 tons per 1,000 stems may be taken as the average weight obtained in different districts, and the figure we have given is based on this information. We believe that this figure has been approximately constant during the period under review.

Other charges comprise our Forest Manager's salary and establishment charges, together with travelling expenses incurred for supervising the collection and purchase of bamboo.

It will be noted that from 1924-25 to 1926-27, we have not shown separate figures under the headings: Cutting, Carting and Rafting, Bundling and

contractors overhead. The reason for this is that during these three years a proportion of our supplies was taken from Chittagong at higher rates than those paid in other areas. As we do not know what proportion of this extra cost was due to higher extraction costs on the part of the Chittagong contractors, and what part may have been due to a possibly higher margin of profit, any analysis of the figures we might give for these years would, we think, be misleading. In illustration of this we give below the rates paid by us during the period for borders from Chittagong:—

1924-25, Rs. 50 per ton.
 1925-26, Rs. 47-6 per ton.
 1926-27, Rs. 47-5 per ton.
 1927-28, no purchase.
 1928-29, Rs. 38-8 per ton.
 1929-30, Rs. 38-1-10 per ton.

(N.B.—These figures do not include Forest Managers' salary and Establishment charges.)

No figures have been shown for 1930-31 as our supplies of bamboo are obtained during the period December-June, in each year, and complete figures for the present season are not yet available. We may however say that the total estimated cost this year is approximately Re. 1-5 per ton below the actual average cost during the season 1929-30, this being chiefly due to increased purchases.

10. We do not consider the present rates of railway freight on coal, bamboo and other materials have caused any special hardship to the industry.

11. As requested we give below a detailed statement of the progress made by our Company in the manufacture of pulp and paper from bamboo. For the sake of convenience the nature of the work carried out has been described generally in the first instance. The results have then been referred to under the various headings prescribed by the Board.

We would however like to mention that owing to their very technical nature we have found some difficulty in describing the precise nature of the experiments which have been carried out and it may well be that much of what we have written will not be fully appreciated until the Board has visited our Mill and seen for itself the exact nature of the machinery to which reference is made, and have also examined samples illustrating the nature of the problems towards the solution of which our experiments have been directed.

The Board is aware that our Mill was equipped to utilise Bamboo, when treated by the sulphite process, for the manufacture of Pulp and Paper. The sulphite process as applied to wood is not new, and we believe that present sulphite practice in Scandinavia and America may be regarded as a more or less perfected process.

It was however admitted in our evidence in 1924 that the process as employed by us at that time was incomplete in certain respects owing to the limited plant at our disposal. We have explained elsewhere in our representation the circumstances which have prevented us from making any large extension to our pulp plant, and it therefore follows that the progress we have made has been chiefly confined within what may be described as experimental limits.

These experiments have not however been merely of a laboratory nature, practical machinery having been evolved and purchased, and we think that our experiments might correctly be described as having been carried out on a semi-commercial scale. That is to say the experiments have in general been carried out with individual units of commercial size. At the same time it has not been possible to instal sufficient of these units to enable us to obtain practical working results based on normal continuous running, such as would require to be employed before it could be claimed that our experiments had been proved on ordinary commercial lines.

It follows that we are unable to quote figures based on continuous operation. The results of our experiments as subsequently detailed have however been calculated on a conservative basis, and we have no doubt that similar, or improved, results would be obtained by applying the results of our experiments on a fully commercial scale.

It will have been apparent from the evidence we gave in 1924 that up to that date we had been more or less continually employed on experimental work of a nature which is inevitable on starting up a new process of manufacture. Essentially this work consisted of overcoming those practical difficulties which must necessarily result when laboratory findings are directly applied for the first time on a commercial scale. In this connection it will be remembered that reference was made to the fact that in the early days we were obliged to produce an appreciable proportion of inferior classes of paper, and we explained in our evidence that most of the immediate difficulties arising out of the practical application of the process had been surmounted, and that we hope in future to confine our output chiefly to the superior classes of Writings and Printings. A study of the figures given in our answer to question 4 will show that this expectation has been fulfilled.

The Bamboo Paper Protection Act was passed on September 16th, 1925, and negotiations were immediately put in hand for raising the necessary finance to enable us to extend our Mill. On November 3rd, 1925, we were informed by telegram from London that finance for the extension had been arranged. A week later a preliminary general outline of the extension was posted from England. On examining this however the estimates which were prepared showed that the complete extension, including Pulp Plant, would cost approximately Rs. 13,00,000. During December, 1925, and January, 1926, discussion proceeded on the technical side of the extension. Meanwhile however it transpired that the finance arranged amounted to only Rs. 10 lakhs and that this could not be increased. Further progress on the technical plans indicated that the cost of the complete extension, including pulp plant, could not be reduced within this figure, and as a result it was decided in February, 1926, to postpone extension of the pulp section and proceed immediately with the paper section. Orders were accordingly placed early in 1926, and it was hoped that the new paper machine would come into operation by the beginning of 1927. Unfortunately shipment of plant from England was delayed by the General Strike in England in 1926, with the result that the new machine did not actually come into operation until July-August, 1927.

It will be appreciated that during the period in which the paper side of our Mill was being extended experimental work on the pulp side was necessarily held in abeyance to some extent. Furthermore the extension of the Mill involved, *inter alia*, the removal of the Washing and Straining plant to a new site and this necessarily interfered with our production of bamboo pulp for the time being.

In this connection we should explain that the general work of extension was carried out by our ordinary staff supplemented by a single erecting Engineer. In addition to this the ordinary operating duties had to be continued, and it was found that little time was available for experimental work until the new paper machine, with its auxiliary plant, had been running for two or three months. By the cold weather of 1927-28, however, it was possible to turn our attention again to experimental work, and during this cold weather Mr. Gray of Messrs. James Bertram & Sons, Ltd., Edinburgh, visited our Mill at Naihati, to discuss with our staff the lines along which further experiments should be made in connection with the preliminary mechanical preparation of bamboo previous to the cooking process.

In this connection it will be recollected that in the evidence given by us before the Board in 1924 reference was made to the fact that we found it more economical to convert certain species of Bamboo into paper than

others and it may be stated that we attributed this mainly to imperfections in our Crushing Plant, which we desired to overcome.

As a result of Mr. Gray's visit it was considered that improved results could be obtained by altering the nature of the surface of our crusher rolls, and special hard steel sleeves for this purpose were accordingly designed. Some correspondence took place regarding the exact nature and details of these, but the order for the sleeves was placed in July, 1928. There was, however, some delay in manufacturing these in England, while before they could be fitted it was necessary to turn down the original chilled iron rolls, which was a long and costly operation.

As a result it was not until July, 1929, that the complete set was in operation, though the first pair of rolls had been fitted with sleeves in March. We shall be glad to show the sleeves concerned to the members of the Board when they visit our Mill, and it will suffice meantime to say that they comprise a carefully graduated set of longitudinally and circumferentially grooved rolls together with one pair of diamond rolls.

Although some improvement was effected by means of these sleeves the results were considerably below our expectations and the diamond rolls in particular proved a disappointment.

The essential idea behind the new sleeves was to subject the bamboo to alternative bending and splitting forces, and although the result from the original arrangement was disappointing, it was hoped for some months that improved results might be obtained by re-arranging the different types of sleeve in different combinations. Consequently it was not until October, 1929, that we were in a position to report fully on the results obtained.

The crushed bamboo produced showed an improvement on that formerly obtained, and the benefit of this was noticeable in cleaner pulp and an almost entire absence of bad cooks. At the same time there was no marked reduction in the cooking time required.

As a result of the relative failure of the new sleeves, samples of bamboo which had been crushed by them were sent to England in October, 1929, to serve as the basis for further experimental work in England. The samples sent comprised pieces of bamboo which had been treated by the various sleeves arranged in almost every possible combination.

Previous to this however the disappointing trend of our experiments had caused us to institute further inquiries in England. These led to a consideration of the possibility of using a special type of splintering machine as auxiliary to the new crusher sleeves. One of our Managing Directors who was at Home in 1929 witnessed experiments carried out with this splintering machine about August, and discussed its possibilities with our Mill Manager who was also in England on leave that year. As a result two of these machines were ordered and arrived at our Mill in January, 1930.

These machines showed an appreciable improvement on the result obtained with the sleeves alone, and we give particulars as follows:—

We started with one splintering machine in March, 1930, and produced in all 35 cooks of bamboo. Results were promising but the treatment was not sufficiently regular. Total cooking time varied from 26 hours to 11½ hours and although some excellent pulp was obtained, results were not sufficiently reliable.

Operations on the splintering machine were suspended to allow a stock of old bamboo being cleared off before the rains, and thereafter the crusher had to be altered to allow of two splintering machines being set up in series. This work was completed by the end of June, 1930, and the experiments continued with bamboo being treated by two machines, after crushing and cutting in the crusher as usual. Results were decidedly better than with one machine and a series of cooks were run off with varying

results but after the right conditions were found the purpose to good and fairly regular in quality.

Of the first 13 cooks made with these splinterers the first three were poor but showed progressive improvement. Thereafter pulp of excellent quality was produced and the average cooking time was 13.2 hours.

Further tests were made from time to time but as we were troubled with occasional bad cooks we reverted to a slightly longer cooking time to ensure clean pulp. There was no object in rushing pulp through, as the quantity of Bamboo Pulp which could be used at this time was limited by our straining capacity. It may be of interest to note here the average cooking time over the past three years. (In these figures experimental cooks and otherwise abnormal cooks are excluded.)

Average cooking time—

	Hours.
May, 1928	24.03
August-September, 1928	23.30
August-September 1929	21.80
August-September, 1930	20.80
May-June, 1931	18.40

Two splintering machines in series have been part of our regular plant since July, 1930.

While it will be noted that cooking time has been reduced there has been no appreciable reduction in acid consumption, and although we have persevered in our experiments with the splinterers we continued meanwhile to seek for some other machine which might give better results. Eventually a machine was found which seemed as if it might give good results if suitably adapted. One of these machines was accordingly ordered and this was installed at our Mill in November, 1930. This machine worked along different lines from anything previously tried, and we shall be glad to show the machine to the Board and explain its method of working when they visit our Mill. The results obtained were, from the start, a great improvement on anything previously achieved, but the machine as originally constituted was only capable of treating a very small quantity of Bamboo daily. The reasons for this were traced and a modified machine intended to overcome this defect was designed and constructed. This machine was delivered at the Mill in February, 1931, and the results have proved most encouraging. As far as Assam Bamboo is concerned the mechanical condition of the treated Bamboo is satisfactory, and for the first time a marked reduction in cooking time combined with a reduction in acid consumption, was achieved without lowering the quality of pulp produced. (In this connexion we should mention that although the splinterers reduced the cooking time, there was no appreciable reduction in acid consumption.) We append particulars of cooks of Bamboo treated by this new machine as follows:—

14 cooks of Assam bamboo have been treated in the new bamboo preparing machines. The results of these cooks may be summarized as follows: In the earlier cooks we had trouble with unresolved fibre probably due to the volume of the acid being reduced too far. Modifications were made and in the last four cooks perfectly satisfactory results were obtained.

Cooking time has varied from 10½ hours to a maximum of 14 hours, the average for the last 6 cooks being just under 13 hours and we could probably work to a 13-hour cooking cycle quite comfortably.

A marked reduction in chemical consumption is shown. This on a conservative basis amounts to 15 per cent. of the total chemicals used (sulphur and magnesia) and would probably be considerably higher in regular practice. Another great advantage of bamboo treated in this manner is the almost

perfect "blows" obtained. Very seldom is any pulp left behind in the digester, and this gives a greater average digester capacity, and indicates a saving in coal, apart from that shown by the shorter cooking period.

Having achieved this degree of progress with Assam bamboo, it was felt that we were in a position to extend our experiments, and to ascertain whether this machine could also be adapted to other types of Bamboo, and in particular to the local species (known as Bilkua) and to Bamboos obtained from the forests in the neighbourhood of Cuttack and Daltonganj. Trial quantities of local Bamboo and Daltonganj bamboo have accordingly been purchased and experiments with these are now in progress. While visual examination of these bamboos after passing through the new machine indicates a great advance on anything we have previously done, we have not yet reached a stage when we are able to give particulars of the resulting cooking time, acid consumption, etc. It is moreover apparent that the machine at our Mill, which was primarily designed for Assam bamboo, is not entirely suited in some respects to the treatment of other kinds. A third machine embodying further improvements has accordingly been designed and when the final adjustments are complete further experiments with this machine will be made. We hope that by the time the Board visit Calcutta, it may be possible for us to show them the third machine in operation.

The above is a brief outline of the experimental work we have carried out in relation to this particular stage of the process.

The next stage in our process may be regarded as the preparation of the acid, and there has been far less scope for progress in this department. This section of the plant is, to all intents and purposes, similar to the plant used for manufacturing sulphite acid in wood pulp Mills and we have therefore enjoyed the benefit of experimental work originally carried out in America.

The next stage comprises the actual cooking of the Bamboo and experiments have been limited to alterations in acid strength, temperature and pressure. The considerations which affect these are too technical to explain at this stage, but when the Board visits our Mills we shall be glad to explain the general principles of our cooking process, and to show them full details of the lines along which experiments have been made. Meantime we may mention that the construction of our digesters is such that modifications of design are impossible and they are in any case merely containers in which a chemical process is carried out. There is therefore no scope in this department for experimental plant or machinery.

The next stage in the preparation of pulp is the washing and straining and this is of great importance. When the pulp leaves the digesters it is found to contain a small proportion (generally less than 1 per cent.) of imperfectly resolved fibres. If these are not removed they will spoil the appearance of the finished paper and it is therefore essential that they should be eliminated by suitable straining plant. There is no doubt that improved mechanical treatment of the bamboo prior to the cooking process would greatly reduce the proportion of such fibres, and it is found that bamboo treated by our new machine presents less difficulty in this respect.

Perfect mechanical treatment would result in a perfectly resolved pulp, and while strainers will still be required from other considerations, they will be definitely less important and standard types will give satisfactory results.

When our Mill was extended in 1927, the straining plant was augmented and re-arranged, and a different type of strainer was installed for experimental purposes. The results obtained still left much to be desired, and we have since corresponded with firms in various parts of the world who specialize in pulp straining plant. Our investigations have shown that for one reason or another none of the standard types of strainer is entirely suited to our requirements, but it was eventually decided in 1930 to purchase a centrifugal type of separator which the makers claimed would do what we required. While this machine has proved excellent for removing foreign matter of different specific gravity from the pulp, we find that it does not remove

the unresolved fibres, the specific gravity of which is so close to that of the fully resolved pulp that both pass through the machine together. A large strainer of the same type as those already in use was installed in April of this year, and this section of the plant is now capable of dealing with all the bamboo which the present digesters are likely to produce.

While we have every hope that some better type of straining machine may eventually be obtained, we feel that we have for the time being exhausted all the possibilities known to us. Considerable improvement has nevertheless been achieved already, and this has recently been augmented by the installation of a new form of Sand Table which we shall be glad to show the Board in operation. Moreover, as already stated, we know that improvements in the preliminary mechanical treatment of the bamboo produce a marked improvement in the original cleanliness of the pulp, and progress in this direction will therefore help to solve the straining question.

The next stage in the treatment of pulp is bleaching. Our pulp has always given satisfactory results in this stage, and these are in any case chiefly dependent on the quality of the unbleached pulp obtained through the previous processes.

We may, however, say that we have been able to reduce our consumption of bleach, per ton of bleached paper made, from 3.40 cwt. in 1924-25 to 2.36 cwt. in 1928-29 and 2.47 cwt. in 1929-30. At the same time our standard of shade has improved during the period showing that more effective bleaching has been carried out.

The next stage in the treatment of pulp is the beating and this may be regarded as the final stage in so far as pulp is concerned. We have stated elsewhere in our replies to the Board's questions that when the new paper machine was erected in 1927 the beaters installed along with it were of a different type from those in the original mill. This arose from the fact that our previous experience with the original beaters showed us that in some respects they were not of the most suitable type for the treatment of bamboo pulp. The new beaters have shown a great improvement in this respect, and have contributed largely to the general improvement in the quality of our manufactures which we claim to have effected during the past four years. As a result of our experience with these beaters however we have observed various respects in which they are capable of improvement and in November of last year we wrote to England explaining our ideas.

A new experimental beater was accordingly designed and ordered at the beginning of this year, and we expect shortly to hear that it has been shipped from England. This beater includes the latest improvements, and our advisers in England agree with us in hoping that it will give extremely good results when used on bamboo pulp.

The above is necessarily a brief outline of the experimental work which has been carried out in our mills. We accordingly look forward to the opportunity, which the Board's visit to our mills will provide, of explaining the precise nature of the experiments and of the reasons underlying them. The Board will also have the advantage of seeing the various machines in operation and can examine samples of the pulp in the various stages of its manufacture, which will give a better indication of the progress which has been made than any description can do.

Having described the general line of the work we have done we now give the results we claim to have achieved. As already explained it is impossible to give actual figures based on continuous working but we have no doubt that we shall achieve equal or better results in practice, as the figures we give for the various economies have been taken on a conservative basis.

We should explain at this stage that some of the economies to which we refer are based partly on the assumption that with any extension of our plant the Deckering system of cooking would be employed. This system is that by which exhaust steam from a digester at full pressure is used for

the preliminary heating of another digester at the beginning of its cook. This system can only be carried out with a minimum of 3 digesters, and 4 digesters are desirable if the full benefit is to be obtained. As we have at present only 2 digesters it has not been possible for us to adopt this system. It possesses obvious advantages, however, the chief being an appreciable reduction in fuel consumption, which is, we think, obvious. Secondly, there is a small but appreciable economy in chemicals owing to the fact that the exhaust steam at this stage contains a small percentage of SO^2 , which is otherwise wasted, as the amount which could be recovered by an SO^2 recovery plant at this stage is too small to justify its treatment.

In addition to the Deckering system we have presumed that any extension of our plant would incorporate the installation of an efficient SO^2 recovery plant for treating the exhaust steam during the earlier stages of the cook. In this connexion we should explain that the normal method of SO^2 recovery as practised in America and Scandinavia is not applicable in our case. We believe that the normal practice is to partially cool the digester exhaust gases and then pass them through the storage tanks in which the fresh acid awaiting use is stored. The SO^2 in the digester gases is absorbed and the acid is thereby rendered specially rich in free SO^2 . In our case the normal temperature of the acid in our tanks is too high to permit of this method being followed, while in our modified process it is not desirable to use an acid containing a high free percentage of SO^2 . To meet our requirements we therefore consider it would be necessary to introduce the exhaust digester gases, after partially cooling them, into a separator. The steam would be removed in the separator and the SO^2 would then be led through a cooling system, after which it would join the gases from our sulphur burners, and would pass with them through the Barker towers where our acid is made.

We may say that after giving considerable thought to the problem we have evolved a design which we hope will meet our requirements and an experimental recovery plant is now being constructed accordingly.

Turning to the various headings under which the Board have asked us to record progress, we accordingly beg to give the following information:—

- (a) The possibility of manufacturing pulp economically from bamboo by the sulphite process has been our main object throughout the experiments we have described and the results we have obtained are shown under the various individual headings below.
- (b) We have considerably reduced the cost of Assam bamboo. This is now approximately Rs. 43 per ton dry weight delivered at the Mill, as compared with Rs. 53-8 in 1924-25, and we do not believe any appreciable further reduction is likely at present. A reduction in cost might be obtainable by the use of bamboo from other areas but its economical treatment is dependent on the suitability of the preliminary mechanical treatment and, as we have explained above, our experiments in this connexion do not permit us to form a decision on this possibility at present. We may, however, mention that we recently obtained a trial supply of bamboo from Daltonganj at Rs. 29 per ton dry weight delivered at Mill and that supplies of local bamboo have recently been obtained at a corresponding figure of Rs. 22-8.
- (c) *Coal Consumption.*—It will be realized that, apart from estimating possible future reductions, it is only possible for us to estimate approximately what portion of our present coal consumption is incurred in the pulp side of our Mill. We have explained in our answer to question 48 our reasons for taking this at 2-78 tons per ton of dry pulp. As regards the future, economy may be looked for as a result of shorter cooking time consequent on improved preliminary mechanical treatment, and also as a result of the Deckering system of cooking. Assuming

that our experiments to date as already described justify us in anticipating that the cooking time will be reduced by 40 per cent., we calculate that the resulting economy in coal would be approximately 25 per cent. The Deckering system would undoubtedly show further economy which, in the absence of practical experience, we estimate at about 10 to 15 per cent. If we calculate a combined reduction of 35 per cent., the fuel consumption would be a little below 2 tons coal per ton pulp, inclusive of the coal for electric power.

- (d) Particulars already given showing the reduction in acid consumption required for cooking bamboo treated by our new machine indicate that as a result of our experiments, definite economy in sulphur and magnesite consumption may be looked for as under. As previously indicated we have found a saving of *not less than 15 per cent.* of Sulphur and Magnesia in cooking bamboo treated by our new bamboo preparing machine. No further definite saving of Magnesia is in sight but installation of an efficient SO_2 recovery system should effect a saving of a further 20 per cent. to 25 per cent. of our present sulphur consumption.

The Deckering system should save a little more sulphur but this is definitely small and need not be taken into account at this stage.

It may be briefly summed up that we have in sight a minimum saving of Magnesia of 15 per cent., which may in regular working be increased to 25 per cent. The saving in sulphur in sight is not less than 35 per cent. and may be as much as 45 per cent. to 50 per cent. with regular working.

- (e) We have claimed in our answer to question 36 that there has been a general improvement in quality in our papers during the past 7 years, and we think that the high standard we have now attained is illustrated by the samples of our paper which we are sending the Board as requested in answer to question 30.

While further improvements may be hoped for these must be of a general nature. We may however mention that, as stated above, improvement in mechanical preparation is likely to result in cleaner pulp and this will have a material effect on the quality of paper produced.

- (f) Modifications in plant and machinery which have already been undertaken have, we think, been sufficiently outlined above, and at the present time we have no other particular experimental machine in view. It is possible that the experiments now in progress will lead to modifications of existing machines and possibly to the installation of new machines of different types. Meanwhile it is however impossible to say what form such possible further developments are likely to take.

- (g) The capital expenditure incurred in connection with our pulp plant since 1923-24 is approximately Rs. 1,50,000 as stated in our answer to question No. 39. This does not however include expenditure on the latest type of machine for the preliminary mechanical treatment, which is not yet known, nor does it include the cost of the new beater now on order.

Over and above this capital expenditure, a considerable proportion of the operating costs of the pulp side of our mill have been specifically incurred in connection with experimental work. It is obviously impossible to estimate the amount involved with any degree of accuracy, but over a period of 7 years it must have been very considerable.

We think also that it may not be out of place to regard the difference between the cost of the Bamboo pulp we have produced, and the price at which a similar quantity of imported wood pulp could have been purchased, as expenditure incurred by us in furthering the progress of the development of pulp from bamboo.

In our answer to question 48 we have estimated our present works cost for bamboo as Rs. 196-6 per ton. If taken over an average for the past three years the cost would undoubtedly be higher and would probably be in the neighbourhood of Rs. 215 per ton. As compared with this our average cost for wood pulp purchased during the years 1928, 1929, and 1930 was approximately Rs. 189. As all the above figures are based on air-dry weight the additional cost has been Rs. 26 per ton. During the period of three years ended 31st March 1931 the bamboo consumption has amounted to 12,164-5 tons and taking an air-dry pulp yield of 49 per cent. the pulp produced has amounted to 5,960 tons. The additional cost incurred during these three years alone, which has resulted from our use of bamboo, may therefore be estimated at approximately Rs. 1,55,000.

With regard to future expenditure we regret we cannot form any estimate in the absence of details regarding the nature of the further experimental plant which may eventually be installed.

- (h) The capacity of our present plant, as stated in answer to question 2, is 200 tons per month.
- (i) Bamboo output, since 1923-24, as given in answer to question 3, has been as follows:—

	Tons.
1924-25	2,035
1925-26	1,821
1926-27	1,512
1927-28	1,522
1928-29	1,656
1929-30	1,732
1930-31	1,965

(N.B.—These figures are for dry pulp.)

- (j) The necessity of making provision for increased supplies of raw bamboo has not yet arisen, but we have had constantly before us the possibility of a large eventual increase. We have repeatedly discussed this possibility with our Forest Manager, and as a result of our investigations we are satisfied that there will be no difficulty in obtaining sufficient bamboo from Assam alone to meet any probable increase in our requirements for many years to come. If bamboo from other areas can be economically used an even wider field will be opened out.

12. Foreign pulp imported by us during the period under review has been of two kinds, namely Easy Bleaching Sulphite Wood Pulp and Strong Bleachable Sulphite Wood Pulp. The quantities purchased each year are shown in the statements (on pages B & C at end) together with the cost in the form required by the Board.

The quantities shown represent the tonnage ordered for shipment in each year as this is the normal basis on which pulp is purchased, and we regret our figures do not show the actual quantities received at our Mill in each year in a convenient manner.

We should further explain that all pulp is purchased by us c.i.f. Calcutta, and the figure we have shown for freight and insurance is based on a letter from our London Office, dated 26th July, 1928, and which reads as follows:—

- “From Finland to Calcutta, the freight and insurance cost approximately 40s., whereas from Finland to United Kingdom, it is 15s. East Coast and 16s. West Coast.
- “From Norway and Sweden, the freight and insurance to Calcutta is 33s. 6d. From Norway to United Kingdom it is 11s. East Coast and 12s. West, and from Sweden to United Kingdom 12s. East and 13s. West.”

We normally import more pulp from Norway and Sweden than from Finland and have therefore taken an average figure for freight and insurance of 36s. per ton. While freight rates have no doubt varied between 1924 and 1931 we think that the prices we have given f.o.b. country of origin are approximately correct. In addition to the countries already named we have purchased pulp from Germany and Czecho-Slovakia, but to a smaller extent.

The figures given for landing charges consist of the Port Commissioners' charges on goods unloaded in the Port of Calcutta, to which Port all our pulp is shipped, and the charges for delivery to our mill represent the freight of As. 1-7-14 per maund charged by the Railway.

13. The causes which led to the increase in our imports of wood pulp, as shown in our answer to the previous question, were set forth in our letter of 8th July, 1930, to the Joint Secretary of the Department of Commerce, Government of India, a copy of which was enclosed with our representation to the Board, dated 27th April last.

14. As our Mills are at present equipped a minimum quantity of imported pulp is required, this minimum being represented by the difference between the capacity for production of paper and the capacity for production of Bamboo Pulp. The former varies slightly but may be taken as being approximately 6,000 tons per annum, while the greatest quantity of pulp produced from bamboo in any year has been just over 2,000 tons. On these figures the minimum annual quantity of imported pulp required by our Mill as at present equipped is approximately 4,000 tons. At the same time we beg to point out to the Board that our Pulp Plant has never had an opportunity of achieving maximum output on account of the experimental work which has been continuously carried out during the past seven years. If worked to its full capacity, which we estimate at approximately 2,400 tons per annum, the minimum quantity of imported pulp required by our Mills, as at present equipped, would be 3,600 tons per annum.

15. There has been a continued fall in the price of wood pulp and this has coincided with a similar fall in the price of other world commodities and the general depression existing to-day is, we think, the chief reason for the very low price at which wood pulp can now be purchased and which we have described in our reply to question 33. For a long time past trade papers have contained reports of the distress existing in the pulp industry on account of such low prices, and there is no doubt that the majority of the Pulp Mills are only just paying their expenses or even selling at a loss in some cases.

The fact that the rise in the price of wood pulp (which at the time of the last enquiry it was anticipated would take place) has not yet materialized, and that the reverse has happened, renders it all the more difficult for anyone to estimate the probable trend of prices during the next few years. All we would venture to say is that it is still our opinion that economic reasons will force up the price of wood pulp at some future time, and it may well be that an all-round improvement in the present depressed world conditions will see the commencement of such a rise.

16. As our plant is specially designed for the treatment of bamboo, we have not attempted to use other indigenous materials; particularly as we are not aware of any other such material which offers equal possibilities for development.

17. The following table gives our consumption of auxiliary materials per ton of finished paper, together with the cost of each material per cwt. in rupees.

The figures are taken from our actual working figures for the period of 12 months ended 31st March, 1931, except as shown in the footnotes attached to the statement:—

	Quantity per ton bamboo treated.	Quantity per ton paper made.	Cost per cwt.
	(Cwts.)	(Cwts.)	(Rs.)
Sulphur . . .	2.772	6.600*	4.88 †
Magnesite . . .	1.842	4.385*	5.584
Bleach† . . .		2.471	5.758
Rosin . . .		0.401	16.132
Alum . . .		1.311	3.570
China Clay . . .		1.641	3.148
“ . . .		lbs.	
Soda . . .		6.94	6.593
Starch . . .		5.15	10.061
Glue and Sundries . . .		5.51	14.177
Dyes . . .		1.25	95.77

18. There is very little difference since 1924, in the availability of auxiliary materials in India. The following raw materials which were purchased by us in India at the time of the last Traffic Board enquiry are still being purchased exclusively in India:—

Magnesite. Rosin.

The following materials which were not obtainable in India in 1924 are equally unobtainable to-day, and our requirements are consequently imported:—

Sulphur. Bleaching Powder.

In addition to the above the principal materials used by us are as follows:—

1. *Alum*.—This was purchased by us in India at the time of the last enquiry. We continued to purchase this material in India up to June, 1929, when our suppliers informed us that it would

NOTE.—*Calculated on a yield of 42 per cent. Paper from Bamboo.

† Calculated on tonnage of bleached paper made. Figure for quantity is for 1929-30 as experiments made with Perchloron during 1930-31 prevent us from giving figures for the complete year 1930-31. The rate shown is, however, the average rate of purchase during 1930-31.

‡ This does not agree with figures shown in Form I which represent a cost of 4.028 rupees per cwt. The difference is due to the fact that excess stock of sulphur was found at the end of 1930-31 and on adjusting this the value of sulphur consumed during the year as shown in our books was automatically reduced.

not be possible for them to continue supplies of our normal quality except at a considerable increase in price. As a result of this superior qualities from Europe were obtainable at lower prices than the local product. On asking the local producers for a quotation in November, 1930, we were informed that they were uncertain as to what their production would be during 1931. They stated that they had already contracted to supply their estimated output to another Indian Paper Mill, and did not consider they were in a position to make us a firm offer.

As regular assured supplies are essential to the running of our Mill we are accordingly purchasing imported alum at present. We may, however, mention that in so doing we derive no advantage as regards prices, as the Indian producers recently indicated a price of approximately Re. 1 per ton lower than we are paying for imported alum.

2. *China Clay*.—In 1924 the whole of our requirements were purchased from Europe. At that time the Indian product was found unsuitable as regards quality. Some improvement has since been made and we give below a statement showing the value of our purchases of Indian clay for each year during the period under review together with the value of our total consumption for each year.

	1924-25 to 1926-27	1927-28	1928-29	1929-30	1930-31
	Rs.	Rs.	Rs.	Rs.	Rs.
Value of clay purchased in India . . .	...	2,405	1,613-15	7,623-8	9,662-8
Value of our total consumption . . .	48,199	26,645-0	26,460-0	29,238-0	31,972-0

In spite of the improvement which has been made, particularly as regards the removal of gritty material, our experience is that the best Indian clay still falls short of the imported quality. This is particularly true as regards colour, which is of vital importance to us in view of the fact that approximately 90 per cent. of our production consists of bleached papers, in which inferior coloured clay has a marked effect on the selling value of the product.

The fact that we have purchased most of our clay abroad at approximately Rs. 68 per ton, against Rs. 50 for the best Indian clay, shows the importance we attach to quality.

3. The remaining materials consist of the following:—

Soda. Starch. Glue. Dyes and Sundries.

These are purchased locally, but we believe they are all importable products which are not manufactured in India.

19. As desired we attach Form III duly completed (D at end). In the case of Bleach there is a fall in consumption during 1930-31. This however is not real but only apparent, as the figure of 596 tons shown for this year consists only partly of ordinary Bleaching Powder, the balance representing "Perchloron". The latter is a relatively new product containing a much higher percentage of available Chlorine. The Bleaching Powder as purchased by us is guaranteed to contain 36-37 per cent. chlorine at the time of manufacture, but this proportion is somewhat lower by the time it is used in our Mill, owing to the unstable nature of the material and consequent loss of strength during shipment and while in stock before use. Perchloron on the other hand is claimed by the makers to contain 75 per cent. available chlorine and to be a more stable product than Bleaching Powder. Consequently a given quantity of Perchloron serves the same purpose as a

relatively larger quantity of Bleaching Powder. Its cost is however proportionately higher.

20. (a) It is impossible for us to give actual figures regarding the labour force employed in collecting primary materials for the reason given in our answer to question 9 (a). We have however obtained information from the same sources as those on which our answer to question 9 (a) is based, as a result of which we believe that the collection of 9 tons of Bamboo is equivalent to providing work for ten men for one month, or two men for five months. The average season during which our supplies are obtained, and which is determined by climatic conditions, and by the conditions regulating Traffic on the Railways, occupies approximately five months. It may therefore be said that for every nine tons purchased approximately two men are fully employed throughout the season.

On this basis the labour employed in collecting our requirements during the period under review has been approximately as follows:—

1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
678	944	1,235	771	579	572	1,557

Actually a far greater number of men probably receive employment for a shorter period, as the classes of labour which are employed do not normally engage in regular work for any length of time. Cutters, for instance, usually make only one trip to the forest during the season, the trip occupying a few weeks, and during this period they cut as many stems as they can. Stems extracted piece-meal in this way are collected by our contractors, or alternatively the contractors engage so many cutters in advance to proceed into the forests and extract an agreed number of stems. Under these circumstances it is difficult to ascertain the total number of men employed, but our Forest Manager estimates that the total number of men to whom employment was given during part of each season was approximately double the figures given above.

(b) The total Indian labour force employed at our Mill during each of the past 7 years has been approximately as follows:—

	Men employed.
1924-25	463
1925-26	426
1926-27	494
1927-28	588
1928-29	612
1929-30	618
1930-31	634

The above figures are averages for the year, and the actual number fluctuates to some extent in accordance with requirements. During the bamboo season for instance, additional men are employed for unloading and stacking arrivals and these men are not required during the rest of the year.

For the year 1930-31 the labour force was constituted approximately as follows:—

Chargemen in responsible positions (i.e., in charge of paper machines, beaters, etc.)	26
Mistries and trained men	244
Boys	50
Coolies	284
Clerical Staff	30
	<hr/>
	634
	<hr/>

Of the total of 634 approximately 566 were employed in the Mill proper, the remaining 68 representing clerical and general staff as under:—

Office clerks	5
Chemists and Digester clerks	4
Clerks in Finishing House, machine house, Store Department and tally clerks	8
Overseer, Draftsmen and Timekeepers	4
Doctor and Compounder	2
Office peons	2
Durwans	20
Workers on compound, roads, etc.	11
Sweepers	12
	<hr/>
	68
	<hr/>

The European Staff consists of five:—

Manager.

Assistant Manager.

Engineer.

Two Machinememen.

In addition we have two Assistant Engineers, one Indian and one Anglo-Indian, and two Indian apprentices.

21. (a) From the information received from our Forest Manager and Bamboo Contractors it appears that the average wage earned by each man employed is approximately Rs. 17 for a full working month. On this basis the amount paid by our Contractors for labour during the period under review would have been approximately as follows:—

1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	*1930-31.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
57,630	80,240	1,04,975	65,535	49,215	48,620	1,32,345

(b) The total wages paid for mill labour as detailed in reply to question 20 (b) were as follows:—

	Rs.
1924-25	1,36,340
1925-26	1,26,005
1926-27	1,28,193
1927-28	1,63,899
1928-29	1,95,922
1929-30	1,99,680
1930-31	2,15,022

22. On the occasion of the last enquiry the Board found that the position of our Mill in regard to the cost of European staff was satisfactory (*vide* paragraph 119 of their report). It was estimated that for a second machine two further Europeans would be required, but as a matter of fact our European staff has only been increased from 4 to 5. This, we think, proves that practical endeavours have been made at our Mill to enable Indian workmen to qualify for and acquire higher supervisory positions. In 1929 an Indian apprentice was appointed on a 5-year agreement and another apprentice was similarly appointed in 1930. These apprentices have opportunities of learning the theoretical side of the trade as well as the practical, the period of training being divided over various sections of the Mill. On the completion of the term, the apprentice binds himself to

(*Estimated.)

work for the company for a further period of 5 years on a salary of Rs. 200 per month rising to Rs. 400 per month in the 5th year. We think considering the size of our plant the above arrangements are satisfactory, and as much as we can be expected to do in the circumstances. We may mention that previous to the appointment of these two apprentices, other Indians were given an opportunity of working at the Mill on probation to qualify for apprenticeship, but for various reasons they did not remain.

23. Since the last Tariff Board enquiry pukka up-to-date coolie lines comprising 72 rooms have been installed. The water supply provided for our labour has been improved, and the water now supplied is from a Tube Well 376 feet deep. This ensures absolute purity and our labour, as a result, has been exceptionally free from water-borne disease.

A dispensary has been installed in which prescriptions written by the Mill doctor are made up and issued free of charge to all workmen. The dispensary is also equipped for the performance of minor operations and has on more than one occasion been valuable in cases of emergency. Recently we have built an isolation room, in which infectious cases, or cases in which infection is suspected, can be isolated and receive proper attention, pending their removal to a fully organized hospital should this be necessary. The nearest such hospital is the Inambara at Hooghly, and an annual contribution towards its upkeep is made by the Company.

We have five individual houses for our senior Indian staff and three more are now being built. It is our intention, as financial considerations may permit, to do all in our power for the welfare of our Indian workers.

We may mention that in February last, we reduced the working hours of all shift workers from 9 to 8 hours but they still receive the same pay as for 9 hours. This alteration is voluntary but we were, as a matter of fact, requested to try the experiment by the Factory Inspector with the idea that more efficient working would result and at the same time would possibly give the labour greater facilities to indulge in sport or other recreation. So far we consider the result of the experiment as satisfactory.

24. (a) The source of electric power is unchanged and is derived from an 1,100 K. W. Brush-Ljungstrom Turbo-Generator. The extra steam required, as a result of our having installed an additional paper machine in 1927, has been furnished by a John Thompson Water Tube Boiler with an evaporation capacity of 20,000 lbs. per hour, and fitted with automatic Chain Grate Stokers, Economisers, etc. This boiler provides steam for the Turbo-Generator and the original Lancashire boilers provide steam for process work. Otherwise the alterations in our power plant are of a minor nature though we may mention that they include a Water Softening plant, the fitting of a Delas Ejector, and Mertz-Price protection Gear to the Turbo, and of a Feed Water Regulator and a steam Purifier to the Water Tube Boiler.

(b) Since installing the Water Tube Boiler, our power costs have been considerably reduced. In 1924 the operating cost exclusive of capital charges was 45 annas per K. W. hour. This has now been reduced to 0.187 annas, representing a monthly cost of approximately Rs. 5,500 and an output of about 700 K. W. per hour or 470,400 K. W. hours per month of 28 days. Details of the monthly expenditure are approximately as follows:—

	Rs.
Coal 500 tons at Rs. 6-4 per ton	3,120
Labour for operating Water Tube Boiler	810
Labour for operating Turbo	320
Supervision	800
Stores and Lubrication	450
	<hr/>
	5,500

The principal factors which have contributed to the reduction in power cost since 1924 are as follows:—

- (1) In 1924 the Turbo-Generator was working at only approximately one-third of its capacity. Its average load is now approximately two-thirds capacity, resulting in increased efficiency.
- (2) The Water Tube Boiler supplies steam to the Turbine at a pressure of 220 lbs. as compared with 140 lbs. previously obtained from the Lancashire boilers. This also gives increased turbine efficiency.
- (3) The John Thompson boiler, being equipped with automatic Chain Grate Stokers, is suited to the use of slack coal, and this, combined with the general decline in coal prices, makes it possible for us to purchase coal at Rs. 6-4 per ton delivered Mill to-day, as compared with Rs. 11-3 per ton in 1924.
- (4) In addition to the decrease in the cost per ton of coal more efficient combustion is obtained in the new boiler resulting in decreased coal consumption per pound of steam.
- (5) The automatic Chain Grate Stokers have caused a considerable reduction in stoking and boiler operating costs.

(c) The electric power consumed per ton of finished paper in 1923-24 was 1,160 K. W. hours. The corresponding figures for 1930-31 was approximately 910 K. W. hours.

25. (1) The production of paper in India for 1929, as given us by the Director-General of Commercial Intelligence, is 40,787 tons. This is the last year for which official figures are available.

The Titaghur Paper Mills Co., Ltd., the Bengal Paper Mill Co., Ltd., and the Upper India Couper Paper Mills Co., Ltd., however, have kindly given us particulars which enable us to give the following figures regarding the production of paper in India for 1930. These are approximate in so far as the different classes of paper are concerned but we think they may be taken as substantially correct.

Production of Titaghur, Bengal, Lucknow and our own Mills.

	Tons.
Writing Papers	9,150
Bleached and Coloured Printings	18,000
Unbleached Printing and Badami	7,600
Blotting	300
Packing Papers and wrapper for Mills' own consumption	2,150
Miscellaneous	100
Total for the four Mills	37,300
Estimated Balance representing production of other Indian Mills, quality unknown	3,000
Grand Total	40,300

We estimate that Indian production to-day is practically unchanged, and that, in round figures, it may be taken as 40,000 tons.

(2) The total Indian demand comprises the production of Indian Mills combined with the Imports of Paper. The latter, however, require to be divided to show the quantity which can be, or is likely to be, manufactured in India, and we have therefore analysed the statistics given in the Accounts

relating to the Sea-borne Trade of British India for the year ended 31st March, 1931, as follows:—

(a) *Writing Paper*.—The total imports of Writing Paper and Envelopes for the year 1930-31 amounted to 7,866 tons, this representing 7,361 tons protected and 505 tons unprotected.

During the five years 1926-27 to 1930-31 inclusive, (i.e., the five complete years for which figures are available since protection was granted), the average percentage of Writing Papers and Envelopes classified as protected was about 95 per cent., the unprotected balance being about 5 per cent. and consisting largely of envelopes imported separately. The average price for protected papers ranged from 4.28 annas per lb. in 1926-27 to 3.94 annas per lb. in 1929-30. The average price for unprotected papers ranged from 6.72 annas per lb. in 1927-28 to 5.46 annas per lb. in 1929-30.

The prices shown for protected Writings include an unknown proportion of envelopes but nevertheless indicate a probable proportion of high grade papers, some of which may be handmade, and which it may not be possible to make in India at present. At the same time the standard of Indian-made writings is now such that we believe them to be capable of supplying most of the requirements of the country. In the absence of more detailed particulars regarding the nature of the writing papers imported, any figures taken must be approximate, but for the purpose of answering the Board's question we have taken 70 per cent. of the Imports of Protected writings (5,153 tons) as representing classes which can be, or are likely to be, made in India.

(b) *Newsprinting*.—Imports in 1930-31 amounted to 21,332 tons unprotected and 209 tons protected. During the five years 1926-27 to 1930-31 inclusive, the unprotected paper comprised about 98 per cent. and the protected paper about 2 per cent. of the whole. Since the chief component in newsprinting is mechanical pulp, which is not at present manufactured in India, we regard the whole of the consumption of true newsprint as comprising paper which is not at present, and is not likely in the near future, to be manufactured in India.

(c) *Printings other than Newsprint*.—Imports in 1926-27 amounted to 7,662 tons protected and 1,751 unprotected. In 1930-31 the corresponding figures were 6,609 and 6,011 tons. The latter class has accordingly advanced at the expense of the former, as is shown by comparing the percentages of the total represented by each during the past five years as follows:—

	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
Protected . . .	81%	62%	46%	51%	52%
Unprotected . . .	19%	38%	54%	49%	48%

The average prices for the two classes range from 3.06 annas per lb. (in 1926-27) to 2.95 (in 1930-31) in the case of Protected, and from 3.17 annas per lb. (in 1926-27) to 2.16 (in 1928-29) in the case of unprotected. It will be noted that the increase in the proportion of unprotected papers is accompanied by a proportionate fall in the average price, and is, we believe, connected with the Tariff Board's recommendation of 1927 that the determination of the percentage of mechanical pulp should be determined on the fibre content and not on the total weight of the paper.

The low prices shown for unprotected papers indicate that they consist chiefly of classes containing a proportion of mechanical pulp, and that they cannot include any great proportion of the special Printing Papers, such as Chrome, Marble, Flint, etc., which were exempted from Protection by the Tariff Board in 1925. In the absence of more detailed information we have accordingly taken 70 per cent. of the total (4,208 tons) as consisting of papers which have taken the place of classes which can be, and are being, manufactured in India.

It may not be true to say that similar papers are being manufactured in India on account of the percentage of mechanical pulp which they contain. At the same time they are used for similar purposes, and if they had been liable to the Protective Duty, we believe that they could and would have been largely replaced by Indian papers without seriously affecting the consumer.

As regards Protected Printing other than Newsprint the prices shown indicate the normal grades of M/F Printing which are largely made by Indian Mills and we have accordingly taken 85 per cent. (5,618 tons) as representing papers which can be manufactured in India.

(d) *Packing Paper*.—The quantity imported in 1930-31 was 11,568 tons as against 10,376 in 1926-27. The average price ranged from 2.85 annas per lb. in 1927-28 to 2.37 annas per lb. in 1930-31. (In this connection it may be noted that in the years 1927-28 to 1930-31 inclusive the average price of imported packing paper was higher than the average price of imports of unprotected printings other than Newsprint.) We ourselves do not manufacture Packing Paper, and feel that our knowledge of the country's requirements in this respect is insufficient to enable us to state what proportion, if any, can be or is likely to be made in India, and we have not therefore included this class among our estimate of the paper which can be made in India. At the same time it may well be that a considerable proportion could be made in India, particularly if assistance in the form of protection were given.

(e) *Old Newspapers*.—Imports in 1930-31 amounted to 41,134 tons and cannot be made in India.

(f) *Paper Manufactures*.—Imports in 1930-31 amounted to 1,052 tons, and we have no reason to suppose that they are of a nature likely to be made in India in the near future.

(g) *Other Kinds of Paper*.—The quantity imported in 1930-31 was 3,487 tons, and the average price has ranged from 7.11 annas per lb. in 1926-27 to 5.37 annas per lb. in 1929-30. These prices indicate that the papers comprised consist chiefly of special kinds for which there is a limited demand in India, and which we cannot therefore regard with any certainty as likely to be manufactured in the country in the near future.

(h) *Boards*.—Imports in 1930-31 comprised the following:—

Straw Boards 11,910 tons at an average price of
0.87 annas per lb.

Card Board, Mill Board, Paste Board (other Sorts)
3,261 tons at an average price of 2.30 annas
per lb.

	Tons.
Manufactures of Card Board	253
Total Boards	15,424

We believe that the manufacture of Straw Boards in India at present is very limited and we cannot therefore regard imports as likely to be replaced by Indian-made Boards in the near future. The same applies to manufactures of Card Board. As regards Paste Board, Mill Board, and Card Board we believe that a proportion could be made in India, or alternatively that the Card Board manufactured in Indian Mills would be equally suitable for some of the purposes for which imported Boards are now used. In the absence of a Protective Duty on such Boards, however, the Indian Mills are unlikely to be able to compete successfully, and we have not therefore included any proportion of this item in the Indian Demand for papers which can be made in India under existing conditions.

Summarising the above we get the following statement of Imports for 1930-31.

	Total Imports.	Proportion which can be or is likely to be manufactured in India.	Proportion which is not likely to be manufactured in India.
	Tons.	Tons.	Tons.
(a) Writing Paper and Envelopes . . .	7,866	5,153	2,713
(b) Newsprint . . .	21,541	—	21,541
(c) Printing other than News . . .	12,620	9,826	2,794
(d) Packing Paper . . .	11,568	—	11,568
(e) Old Newspapers . . .	41,134	—	41,134
(f) Manufactures of Paper . . .	1,052	—	1,052
(g) Other kinds of Paper . . .	3,487	—	3,487
(h) Boards . . .	15,424	—	15,424
Total . . .	114,692	14,979	99,713

Excluding Old Newspapers, Paper Manufactures, and Manufactures of Card Board, the total imports for 1930-31 amounted to 72,253 tons, of which we consider 14,979 tons (as above shown) consist of papers which can be manufactured in India. The remaining 57,274 tons, which we feel we cannot definitely regard as likely to be manufactured in India in the near future, are made up as follows:—

	Tons.
Newsprint	21,541
Straw Boards	11,910
Packing Paper	11,568
Other Sorts	12,255
	<u>57,274</u>

Taking these figures and combining them with our estimate of the production of the Indian Mills we arrive at our estimate of the Total Indian Demand as shown on J at end.

In concluding our answer to this question it may not be out of place to discuss the question of what demand may reasonably be anticipated in the future.

Between 1926-27 and 1929-30 there was a steady increase in the demand, while in 1930-31, there was a substantial decrease in imports, although the Production of Indian Mills was maintained. We attribute the reduced Import figures for 1930-31 to the General Depression in Trade, and the political situation in India in 1930, and feel that in considering the question of future demand, these circumstances, which it is hoped are of a temporary nature, should be discounted. We accordingly give below particulars of the

increase we estimate took place between 1926-27 and 1929-30 in the Indian demand for papers which can be made in the Country.

	Total imports in 1926-27.	Total imports in 1929-30.	Increase.
	Tons.	Tons.	Tons.
1. Writing Papers (Protected) . . .	9,143	11,546	2,403
2. Printing other than News (Protected) .	7,662	8,171	509
3. Printing other than News (Un-protected) . . .	1,751	7,817	6,066
Total . . .	18,556	27,534	8,978

	Average increase per Annum.	Percentage we have taken as capable of Production in India.	Average annual increase in demand for papers which can be produced in India.
	Tons.	Tons.	Tons.
1. Printing Papers (Pro- tected) . . .	801	70%	561
2. Printing other than News (Protected) . . .	170	85%	144
3. Printing other than News (Unprotected) . .	2,022	70%	1,415
Total . . .	2,993		2,120

The corresponding increase in the production of Indian Mills between 1926 and 1930 was as follows:

(A) Production of Titaghur, Bengal, Lucknow, and our own Mills.

	Output in 1926.	Output in 1930.	Increase.	Increase per annum.
	Tons.	Tons.	Tons.	Tons.
Writing Papers . . .	6,800	9,150	2,350	588
Bleached Printings . .	14,000	18,000	4,000	1,000
Unbleached and Badami . . .	6,800	7,600	800	200
Packing and Wrapper . .	2,250	2,150	—100	—25
Miscellaneous . . .	650	400	—250	—63
Total for the 4 Mills .	30,500	37,300	6,800	1,700
(B) Other Mills . . .	1,280	3,000	1,720	430
(Quality Unknown) . .	...	...	...	...
Total . . .	31,780	40,300	8,520	2,130

Combining the above tables the average annual increase for the 3 years previous to the present general depression in trade was approximately 4,250

tons. While we do not predict any expansion until such time as there may be an improvement in world conditions, (and it may well be that in the meantime the demand may show a further temporary decrease) we feel that this figure of 4,250 tons indicates the normal expansion in the demand for papers of those classes which can be made in India which may be looked for as soon as more normal conditions prevail throughout the world.

It is nevertheless our duty to point out that this increase represents only a small part of the development which must eventually take place as a result of increasing education. The highest consumption of unmanufactured paper, which took place in 1929-30, amounted to approximately 130,000 tons, which is less than 1 lb. per head of population per annum. The potential Indian demand of the future may be indicated by reference to the following consumption per head in other countries in 1925.

	Lbs. per annum.
U. S. A.	152
Great Britain	81
Germany	48
France	40
Belgium	50
Argentina	31
Brazil	13
Australia	44
Japan	18
Chile	26
Egypt	5

26. (a) Whilst we certainly do not consider there is any immediate likelihood of a separate Indian pulp industry coming into existence, we feel that, given some assistance as outlined in our reply to question 27, the manufacture of Indian made pulp by the existing Paper Mills should develop. They would be encouraged to foster the use of indigenous fibres for their own products, thus in a sense creating their own markets for pulp.

(b) We can find no grounds at the present time for revising the Board's conclusion regarding the possibility of a market for Indian made pulp abroad, though we still look to the time when this may eventually become an important factor for consideration.

27. In our opinion there are certain grounds for reconsidering the question of a Protective Duty on imported Pulp.

In paragraphs 86 and 89 of chapter IV of their Report the Board stated that the claim for such duty was founded on two objects:—

- (1) To enable Bamboo Pulp to replace Wood Pulp in supplying the needs of Indian Paper Mills.
- (2) To promote the ultimate development of an Export Trade in Bamboo Pulp.

The Board further pointed out that from this Company's point of view the first object was a stepping stone to the second.

In paragraph 90 the Board held that the special justification for increasing the price of paper to the consumers (which might be found if it could be established that a substantial increase in the cost of wood pulp could be no longer deferred) did not exist, and that object 2 could not therefore be regarded as a factor which should influence the decision of the Government of India on the question of whether an Import Duty should be imposed on Wood Pulp.

Further to this the position with regard to the possibility of export was fully examined in paragraphs 91 to 93 and the prospects shown to be somewhat remote.

In paragraphs 94 and 95 of the Report, it was held that an Import Duty on pulp would be unlikely to lead to the establishment of a separate pulp industry, and the Board stated that it would be a somewhat stringent measure to increase the price of paper to the consumer merely to force the Indian paper makers to forego the use of an imported material.

In paragraphs 97 and 98, the Board further held that it was not yet established that Bamboo Pulp could entirely replace Wood Pulp as far as existing Indian Mills were concerned.

We must admit at the outset that the Board's views regarding the possibility of an Export Trade have been entirely justified by events, and we do not put this possibility forward to-day as a ground for reconsidering the question of an Import Duty on Wood Pulp.

We are however of opinion that this question is deserving of reconsideration with the object of enabling Bamboo Pulp to replace Wood Pulp in supplying the needs of Indian Paper Mills, and we base this opinion chiefly on two points:—

- (1) We believe it can now be established that Bamboo Pulp is capable of replacing Wood Pulp almost entirely in supplying the needs of Indian Paper Mills.
- (2) The fact that the Government of India did not adopt the Board's recommendation regarding financial assistance to our Company, necessitates the consideration of whether some other form of special encouragement should now be provided to promote the objects which led the Board to frame this recommendation.

With regard to the first point our views are the same as at the time of the last enquiry, and we hope that on this occasion further supporting evidence will be available from other Indian Mills, who have been experimenting with bamboo. In addition, valuable evidence will we hope be submitted by the Forest Research Institute.

The second point requires closer scrutiny and we attach great importance to paragraph 132 (sections 4, 6, and 8) of the Board's Report, which we submit have a close connexion with Chapter IV.

This paragraph shows that although the Board did not consider that an Import Duty on Wood Pulp could be recommended, they were nevertheless of opinion that some encouragement should be given to the development of the Pulp side of the Industry. In arriving at this conclusion the Board stated that it was desirable that the work already done on Bamboo should not be wasted and that the Sulphite process should be continued on a scale sufficient to ascertain its possibilities, particularly with a view to obtaining further information regarding the extent to which costs under various heads could be reduced.

Elsewhere in our representation we have described the reasons which have prevented us from obtaining, on a practical scale, the information required by the Board, and which have their root in the fact that the Board's recommendations were not adopted by Government in full. We suggest, as a natural inference, that had the Board foreseen this fact and its consequences, they might have been led to a further consideration of other possible means of attaining their object. Apart from financial assistance, as recommended by the Board, there appear to us to be only two ways in which this object could be attained, the first being a bounty on the manufacture of Bamboo Pulp, and the second being an Import Duty on Wood Pulp.

In paragraphs 144 to 146 of their Report, the Board stated their reasons for discarding the first alternative, and we are not in a position to put forward any argument which would entirely meet the objections stated by the Board. At the same time we feel that this possibility might be reconsidered should it still be felt that an Import Duty on Wood Pulp cannot be recommended. We ourselves believe that the latter is preferable however.

and that the objections found by the Board in 1925 do not apply with equal force to-day. These objections were essentially four in number:—

- (1) That the possibility of an Export Trade could not be considered as a decisive factor until it could be established that a substantial rise in Wood Pulp prices was imminent.
- (2) That an Import Duty would be unlikely to lead to the establishment of a separate Pulp Industry.
- (3) That it was not established that Bamboo Pulp could entirely replace Wood Pulp in the requirements of the Indian Mills.
- (4) That an increase in the price of paper to the consumer could not be justified merely to force the Indian Mills to forego an imported material.

Taking each of the objections in turn, we beg to submit our views for the Board's consideration as follows:—

- (1) As already stated we do not put forward the ultimate development of an Export Trade as an argument in favour of an Import Duty at the present time.
- (2) As a corollary of (1) we are at present concerned only with the question of encouraging the Bamboo Pulp Industry to expand within the scope of the requirements of the Indian Paper Industry. This being so we do not see that the creation of a separate Pulp Industry is in any way necessary at present, even with a view to an ultimate Export Trade. The information which the Board desired to obtain could be obtained as well from a combined Pulp and Paper Mill as from a separately established Pulp Mill, while the Industry would ascertain by practical experience whether Bamboo Pulp could be more economically produced in a separate Pulp Mill adjacent to the Raw Material, or by installing Pulp Plant at the Paper Mill. In either case the necessary knowledge and experience would be available for the establishment of a separate Pulp Industry when Export Trade becomes possible, and meanwhile we submit that this point is not of vital importance.
- (3) We have already stated our views on this point, but it may not be out of place to suggest that an Import Duty on Pulp need not be prohibitive. If, for instance, this could be so arranged as to bring the cost of Wood Pulp exactly in line with the cost of manufacturing Bamboo Pulp it would be open to the Mills to use whatever quantities of either they found necessary. Actually we recommend that the duty should be somewhat higher in order that the use of Wood Pulp should be definitely discouraged. At the same time the difference in price might be so adjusted as to achieve this object, while at the same time enabling Mills to obtain Wood Pulp at an only moderately increased cost in cases when this might be preferable to Bamboo Pulp for any special reason.

In order to give Mills sufficient time to arrange for necessary finance for additional plant and for the erection thereof, also for the organization essential for increased supplies of raw material, we suggest that they should be allowed to import up to 31st March, 1934 free of duty, wood pulp up to their respective average annual imports for the three years ending March, 1931. The amount to be allowed to be imported free should be reduced annually thereafter by 20 per cent. of this average figure, until the import of air dry wood pulp is brought down to 25 per cent. of the annual paper production of the Mill, the figure for the preceding year being taken in each case. Any pulp imported over such specified quantities would be subject to such duty as may be decided upon.

- (4) A proper consideration of this point involves first of all the determination of the actual burden which would be imposed on the consumer.

In our answer to question 49 we have stated that we estimate our cost of manufacturing Bamboo Pulp on a scale sufficient to meet the requirements of our Paper Mill at approximately Rs. 171 per ton Commercial air-dry weight. We accordingly recommend that the proposed duty on Imported Wood Pulp should be such as would bring its landed cost to a level of Rs. 210 per ton, the amount of the Duty being regulated in accordance with fluctuations in the price of Wood Pulp, to maintain this level. The present minimum price for easy Bleaching Sulphite Pulp may be taken as about £10 per ton C. I. F. Calcutta. At Exchange $1/5\frac{1}{2}$ this equals Rs. 135.3 C. I. F., or say Rs. 140 landed, so that the present duty would require to be Rs. 70 per ton.

Assuming that Wood Pulp Imports continued as at present the increased cost of Materials to Indian Mills is determined by the amount of duty they would have to pay. In 1930-31 the Imports were approximately 20,000 tons, and the duty payable on this quantity at the rate of Rs. 70 per ton, would be Rs. 14,00,000.

If, however, Bamboo Pulp can be produced at Rs. 190 per ton, the increase in manufacturing costs could be reduced by substituting this for Imported Wood Pulp. Thus Rs. 14,00,000 represents the maximum increase in manufacturing costs, and, on a total output of 40,000 tons, is equivalent to an increase in the cost of paper of three pies per lb.

Taking this figure as representing the additional Protective Duty on Paper which would be entailed by a Duty on Pulp, and multiplying it by our estimate of 55,000 tons as the present Indian demand for Paper which can be, or is likely to be, manufactured in India (Question 25), the total burden to the consumer would not exceed Rs. 19,25,000. On a population of 330 millions, this is equivalent to 1.12 pies per head per annum.

It may further be noted that notwithstanding the present Protective Duty the cost of paper to the consumer is lower to-day than it was in 1924. This is shown by our own sales returns and also by the statistics for the Sea Borne Trade of British India. In 1923-24 the average value of the Total Imports of writing paper and envelopes, and of printing other than News, was 4.33 annas per lb. Adding Duty at 15 per cent, the landed cost becomes 4.98 annas per lb. The corresponding figure for 1930-31 is 3.24 annas per lb. and with duty at 1 anna per lb. this becomes 4.24 annas per lb. This shows a reduction of 0.74 annas per lb. or Rs. 103.10 per ton, while current figures show a further reduction.

As a result of the above we submit:—

- (a) That the extra burden to the Consumer resulting from an Import Duty on Wood Pulp would be small.
- (b) That even with an Import Duty on Wood Pulp the price of paper would still be markedly cheaper than before the introduction of the present Act, and probably not greatly higher than in 1930-31.

In this connection it may be noted that the Average Value of the Total Writings and Envelopes (Protected) imported in March 1931 was 3.61 annas compared with an average of 4.12 for the year 1930-31.

- (c) That the country would benefit by the increased development of Indian resources, and the additional employment of Indian Labour.
- (d) That Government would directly benefit by additional revenue in the form of—
 - (1) The Duty on imported Pulp itself.
 - (2) Increased Railway Traffic on Coal, Bamboo, etc.
 - (3) Increased Forest Royalty.

- (e) That the objects for which the Board recommended financial assistance to this Company in 1925 would be made possible of attainment.
- (f) That the Industry might be expected to be free, within a reasonable period, from any dependence on foreign countries for its supplies of Primary Raw materials.

In connection with the above we would particularly emphasize (c), which has also been strongly urged by the opponents of Protection. We cannot but regard the Pulp and Paper Industries as being really a single Industry. Until the comparatively recent invention of Artificial Silk, Wood Pulp was used only in the manufacture of Paper, and it was merely as a matter of convenience and a result of questions of transport that any dissociation arose. We feel as a logical result, that Protection of Pulp and Paper should go hand in hand and that the development of the country's natural resources particularly when they are at present in the nature of waste products, is of the highest importance. In this connection may we venture to suggest that this development would produce wealth which might be regarded as an offset to the burden imposed by an increase in the price of paper? If viewed in this light it is possible that substantial justification for the latter might be established.

On these grounds we accordingly beg to invite a reconsideration of the question of an Import Duty on Wood Pulp, or, alternatively of other means which would encourage the development of the use of bamboo, and which might be expected to render Indian Mills independent of the use of foreign Pulp.

28. The classes of paper which form the bulk of our output were White Printing, Cream Laid, Cream Wove and Azure Laid. In 1930-31 these four lines comprised 85.65 per cent. of our total output, and no other individual item of manufacture exceeded 3 per cent. of the total. We believe therefore that it will be sufficient if we confine our reply to imported papers which compete directly with these classes, and we give below particulars of the lowest prices, at which these are being imported to-day:—

- (1) *White Printing*.—In December last one of our dealers obtained a quotation from a leading firm of British paper importers, and he was quoted for Belgian Printing at £22-10 per ton nett c.i.f. Calcutta. This price was quoted without any quantity being stated, and our dealer informed us he had no doubt he could have obtained a reduction of ten shillings or even £1 per ton, if he had made a firm offer for a considerable quantity, say 100 tons.
- (2) *Cream Laid and Cream Wove*.—The only essential difference between these classes lies in the nature of water-mark, and this does not affect the cost or selling price appreciably. Cream Laid prices generally may accordingly be taken as applying equally to Cream Wove, and *vice versa*.

We have recently seen quotations for wood-free Cream Laid at £23-12-6 per ton, c.i.f., Indian Port, and we have been informed that lower prices can be obtained for substantial business. We accordingly regard £23 as the approximate minimum price to-day.

- (3) *Azure Laid*.—This paper is generally similar in its characteristics to Cream Laid with the exception of the colour. The better quality Azure Laid used for ledgers may contain a large percentage of rag and be relatively high in price, but there are large quantities of Azure Laid imported into this country which consist chiefly, if not entirely, of wood pulp and do not possess great strength. We have not ourselves recently seen any original invoices for imported Azure Laid but from our knowledge of the prices at which these are obtainable in the bazar, we should say that this quality can be imported to-day at between £25 and £26 per ton.

The prices given above represent our idea of the lowest price at which wood-free papers are being imported into India to-day. Superior qualities are imported at higher prices and there is a considerable demand at the present time for Dutch Cream Laid at between £24 and £25 per ton. Similarly there is always a demand for special qualities of White Printing at various prices which depend on the purposes for which the paper is required and which may exceed £30 per ton.

Similarly there is also a demand for Papers containing a proportion of mechanical wood pulp, this proportion being, in some cases, sufficient percentage to exempt the Paper from the Protective Duty. Prices for papers of this description (which are nevertheless of sufficiently good quality to be substituted in some cases for our White Printings and Writings, and more particularly for Badami), are of course much lower than those given above.

With our relatively small output, and high proportion of better grade Printings and Writings, we are perhaps less affected by such inferior papers than other Indian Mills, and the chief competition we experience is in respect of wood-free White Printing, Cream Laid, and Azure Laid, the minimum c.i.f. prices for which are approximately as given above. At the same time such cheap imported papers react on the market, and we are necessarily affected by the tendency towards lower prices, and any resulting scarcity of orders.

The landed cost of wood-free Papers on the c.i.f. prices given above will be—

Quality.	Sterling Rate per ton c.i.f. £ s.		C.i.f. Cost in Rs. at Ex. 1/5 $\frac{1}{4}$. Rs. A.		Duty. Rs.		Landing and Clearing charges. Rs.		Landed Rate per ton. Rs. A.		Landed Rate per lb As. P.	
White Printing .	22	10	304	4	140	5	449	4	3	2	51	
Cream Laid .	23	0	311	0	140	5	456	0	3	3	08	
Azure Laid .	25	10	344	13	140	5	489	13	3	5	99	

29. In comparing the Railway Freight paid by Importers to up-country Markets and the Freight paid on the Produce of our Mill, such Markets require to be grouped in two classes:—

I. Those Markets in which imported Papers would normally be obtained through Calcutta.

II. Those Markets in which imported Papers are chiefly obtained through Ports other than Calcutta.

In the case of I the Freight paid on the produce of our Mill is less than the Freight payable on imported Papers, and the area concerned reaches approximately as far as Lucknow, Cawnpore, Raipur and Cocanada. Typical instances are:—

	Freight from Naihati on I.P.P. Paper.		Freight from Calcutta on Imported Paper.	
	Wagon Loads. Rs. A. P.	Small Loads. Rs. A. P.	Wagon Loads. Rs. A. P.	Small Loads. Rs. A. P.
Gaya .	0 5 0	0 6 0	0 10 11	0 10 11
Patna .	0 4 1	0 4 9	0 12 6	0 12 6
Benares .	0 6 1	0 7 2	0 15 8	0 15 8
Allahabad .	0 6 2	0 7 5	1 0 1	1 2 7
Cawnpore .	0 7 8	0 9 2	1 0 1	1 6 9
Lucknow .	0 7 8	0 9 2	1 0 0	1 6 3
Cocanada .	1 3 5	1 3 5	1 8 0	1 8 0

(N.B.—All the above rates are per maund.)

In the case of II, while the Freight paid on our Paper may be lower than the Freight payable on Foreign Paper imported through Calcutta, it may still be almost as high as, or even higher than, the Freight on Foreign Paper imported through other Ports. As examples of this we may quote the following:—

	Wagon Load Rate from Naihati for I.P.P. Paper.	Wagon Load Rate from Calcutta for Imported Paper.	Wagon Load Rate for Imported Paper from other Ports.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Delhi . . .	0 11 1	1 0 1	0 13 8*
Lahore . . .	1 3 4	1 7 6	0 13 8*

In Ports other than Calcutta, and in their immediate vicinity, we are definitely at a disadvantage as regards Freight. It costs us approximately Re. 1-1-3 per maund by Rail to Madras, and Re. 1-4-1 to Bombay. Sea Freight to these places is about 15 annas per maund, but this involves delay and necessitates more expensive packing. Against this it costs dealers no more to land Foreign Paper in Madras or Bombay than it does in Calcutta.

As a result our experience of up-country Freights from Ports other than Calcutta is very limited. In the case of Bombay, however, we are informed that the Railways do not discriminate between Indian and Foreign Papers when quoting rates. We understand that certain concessions have been granted to the Poona Mills, but that similar concessions would be granted to paper made by other Indian Mills, or to Foreign Paper, if it could be shown that the traffic likely to result would be equally beneficial to the Railways.

30. We regret that our records are not kept in such a manner as to give the information in the form required by the Board. The reasons for this are as follows:—

- (1) In some cases there is a greater difference in price between different substances in the same class (e.g., between 6 lbs. Cream Laid F'cap and 10 lbs. Cream Laid F'cap, or between 12 and 16 lbs. demy White Printing), than between different classes of paper, even in cases where one class is a writing paper and the other a Printing, (e.g., Cream Laid and White Printing in the same substance).

In illustration of this we quote the following from our current Calcutta price list:—

	Per lb.
	As. P.
Cream Laid 13×16×6 lbs.	4 3
Cream Laid 13½×16½×10 lbs.	3 9
White Printing 18×22×18 lbs.	3 9

It will be noted that in this case the difference between a light and a heavy weight Cream Laid is 6 pies per lb., while there is no difference between Cream Laid and White Printing of similar substance.

- (2) In some cases there is a marked difference in price between two kinds of Printing even of the same substance (e.g., White Printing and Common Badami) while, as we have seen, the price for a printing and a writing may be the same (e.g., Cream Laid and White Printing of the same substance).

*These are not based on actual quotations but we believe they represent approximately the Freight from Bombay in the case of Delhi, and Karachi in the case of Lahore.

In illustration of this we quote the following from our current Calcutta price list.

	Per lb.
	As. P.
Cream Laid $13\frac{1}{2} \times 16\frac{1}{2} \times 10$ lbs.	3 9
White Printing $18 \times 22 \times 18$ lbs.	3 9
Common Badami $18 \times 22 \times 18$ lbs.	2 8

- (3) The classification of paper into Writing, Printing, etc., refers primarily to the use to which the paper will be put and indicates only approximately its actual quality. While Writing papers generally are more costly to make, and consequently command higher prices, than printing papers, the reverse is sometimes the case.

This depends on such considerations as strength, and other special properties. For instance Printing paper manufactured for the Government of India, which complies with a very high standard of strength and quality, may be, and usually is, more costly to make (irrespective of whether it commands a higher price, though the latter may sometimes be the case) than a White Printing, or even a Writing paper such as Cream Laid, which is manufactured for the Bazar and which is not required to comply with such a high standard as regards quality and strength. In the case of our own Mill the raw materials used for both Writing and Printing papers are practically identical, and the special characteristics required are chiefly given by modifications in the manufacturing processes, such as beating, etc., and it is therefore quite possible for a Printing paper, in which special properties are required, to be more costly to manufacture than a Writing paper where special properties are not required.

As a result of the above our records have not therefore been kept in such a manner as to distinguish between the average prices obtained for Writing and Printing papers, and we believe moreover that even if these figures were available they might prove misleading for the reason stated.

Actually our records from 1st October, 1927 to date distinguish between Bleached and Unbleached papers, the latter class including such wrapper as is manufactured for our own consumption. Previous to 1st October, 1927 this distinction was not kept, and we are therefore able to give only the total average price realised for all classes.

Actually prices realised are as shown in the statement E at end the figures shown being after deduction of all discounts and commission.

31. As requested we attach a statement F at end showing the prices at which the chief products of our mill have been sold at Calcutta and up-country centres for the past five years. The places we have selected apart from Calcutta are Allahabad, Delhi, Lahore, and Madras. We should however explain that Delhi has for many years been a low priced market, and we think we are justified in saying that Indian Mills generally have used Delhi principally to absorb their output of what is known as "Job Paper". This comprises papers which for one reason or another are inferior to the mills' normal production, and a proportion of such paper is inevitable in any Mill. The main justification for concentrating sales of such paper in one market is that by so doing the prices obtainable in other markets are not prejudiced by sales of slightly inferior paper at lower prices. It will be noted that the prices realised by us in Delhi are generally below those realised in Allahabad and Lahore and the reason above stated is the chief explanation.

Turning to Allahabad and Lahore it will be noted that we have always obtained better prices in these places than in Calcutta, except during 1930. There are two chief reasons why our up-country prices during 1930 were

lower than in Calcutta. In the first place it will be noted that in the case of Lahore there was a marked drop in prices in 1929. This was also true for Allahabad though the reduction was less marked. In both cases the reduction in prices was forced upon us by the sales policy of the Punjab pulp and paper mills which commenced manufacture at the beginning of 1929, and immediately stated its intention of selling paper at 2 to 3 pies per lb. below the prices of other Indian paper mills, and that in the event of the latter reducing their prices it would in turn reduce still further and so continue to under-sell them by a fixed difference of 2 to 3 pies.

As a result of this policy the older mills were forced either to meet this competition or to abandon their longstanding connection with up-country markets.

In the second place it will be noticed that there was an increase in the prices realised by us in Calcutta during 1930, this increase representing the concerted efforts of the three mills situated in Bengal to stabilise prices in their Home market.

As a result of the decrease in up-country prices combined with the stabilisation of prices in Calcutta we obtained a lower return up-country during 1930 than we did in Calcutta.

As a result of this anomalous position the three mills situated in Bengal have since made combined efforts to stabilise up-country prices along the same lines as adopted last year in relation to the Calcutta market. The result of these efforts is indicated by the last set of figures in the statement and it will be noted that our prices to-day in Allahabad, Delhi and Lahore are higher in all cases than our Calcutta prices.

In case of Madras we have realised a slightly better price for Cream Laid than in Calcutta but a slightly lower price for white printing. In this connexion we would however explain that practically the whole of our sales in Madras consist of Cream Laid and our price for White Printing has been more or less nominal. We can only attribute our inability to sell White Printing in Madras even at the very low prices offered, to the popularity of low-priced foreign printing papers in that market. In this connexion imports of Printing (other than Newsprint) to Madras in 1929-30 amounted to 3,765 tons of a declared value of Rs. 13,00,660 or 2.47 annas per lb.

Apart from the special conditions prevalent during 1930, and excluding the case of White Printing in Madras, it will be seen that we have generally obtained higher prices up-country than in Calcutta and it has always been our endeavour to secure a price up-country which will be equivalent to the price we obtain in Calcutta, after allowing for the difference in freight.

There are however one or two factors which prevent us from doing so in all cases.

It will be appreciated that our selling prices in Calcutta are chiefly determined by the prices at which foreign paper is being imported. At the same time we are usually able to obtain a higher price in relation to the price of imported papers in Calcutta than we are in other Ports. This is natural in view of the fact that Calcutta is our home market and has grown up along with Mills situated in its vicinity. As a result Indian Papers are known and popular in Calcutta to a greater extent than in other Ports and this combined with the fact that the principal Indian Mills have their offices in Calcutta and are thus able to keep in close touch with dealers, and to make prompt deliveries, gives us an appreciable advantage.

While our paper is now generally well known up-country we do not perhaps enjoy such a strong position in this respect as we do in our Home market. Furthermore we have in some cases, particularly in the case of Delhi and Lahore, to meet foreign competition from Bombay and Karachi, and these two facts probably explain the slight difference in the return we obtain from up-country markets (after adjusting freights) as compared with the prices we obtain in Calcutta.

It will be noted that to-day's prices represent an increase in up-country prices as compared with 1930, but that they represent a decrease in the case of Calcutta. The former chiefly represents the increase which has been made possible by the fact that the Punjab Pulp and Paper Mills have suspended manufacture, and is therefore the counterpart of the reduction forced on us in 1929. The reduction in Calcutta is a reflection of the fall in prices for imported papers during the last few months.

It will be seen that the two adjustments combined have brought back our up-country prices to approximately their correct relation with our Calcutta prices.

32. Generally speaking we consider that the price realized by us for any class of paper lies between the maximum and minimum prices commanded by the corresponding class of imported paper. This we think is indicated by the figures quoted in our replies to other questions, and is natural in view of the fact that the names under which paper is classed refer primarily to the use to which the paper will be put, and indicate only secondarily the quality of the paper.

In the case of paper where not only the class, but also the actual quality, approximate closely to our paper, we believe that in Calcutta our paper commands a slightly higher price than imported paper and in other ports it commands a slightly lower price. The difference must however necessarily be small because the Indian merchant is a keen buyer and price is his main consideration. If he is satisfied that two qualities of paper, one Indian and one imported, are similar in quality and equally suitable for his purpose he is not prepared to pay a higher price for one than for the other. It is practically impossible to quote statistics or even specific cases as everything depends on the dealer's opinion regarding quality, and this does not always agree with the opinion which would be given by an expert accustomed to western conditions. Thus the Indian merchant requires a hard printing with good bulk and which will be suitable for both writing and printing. In Europe on the other hand the printer requires a soft paper of moderate bulk which need not necessarily be suitable for writing but which will be relatively strong and durable and will have a good "look-through". The Indian dealer on the other hand is little concerned with strength, durability or "look-through". Even if a dealer considers that an imported and Indian paper are identical as regards both quality and price our experience is that there is no certainty as to which he will purchase. Apart from questions of salesmanship we believe that the chief considerations which commonly affect his decision are as follows:—

The reasons which might induce him to purchase imported paper are:—

- (1) Generally speaking his cost price for imported paper will be unknown to his customers whereas the latter invariably knows at what price Indian paper is selling in the district. This renders it possible in some cases for the merchant to include a greater margin of profit in the sale of imported paper, as he justifies his proportionately higher selling price for imported paper by an alleged superiority in quality which may or may not be true in fact. This may easily be done in cases where the customer is uneducated or semi-educated, and the importance of this factor has been repeatedly impressed on us by those merchants who confine their business largely to imported papers.
- (2) Even if he does not obtain a greater margin of profit the merchant may be able to achieve a larger turnover with imported paper by alleging superior quality in a similar manner. We believe that among uneducated and semi-educated Indians there is a definite tendency to believe that foreign articles generally are of better quality than those made in India. This is quite independent of the particular instance of paper and is we believe, founded on such articles as cotton goods, matches, hardware, woollen goods, glass, paint, etc., in which the quality of the

Indian product was generally regarded (at least formerly) as inferior to the imported article. We believe this general tendency can be, and is, exploited by Indian paper merchants in many cases.

On the other hand the chief considerations which induce Indian merchants to purchase Indian paper on equal considerations of price and quality as compared with imported paper are as follows:—

- (1) The desire to support an Indian industry. Our experience however is that until recently this factor has not been of great importance and that it still carries less weight than might be supposed. In particular we would mention the case of Bombay, which notwithstanding a declared boycott on foreign goods still obtains the bulk of its paper requirements from abroad.
- (2) Supplies are more readily and quickly available in the case of Indian paper, particularly in Calcutta and up-country markets, and the merchant is not therefore obliged to carry such large stocks or tie up so much capital.

In any case we believe that the above considerations apply only when both quality and price are very nearly equal. Prices as a rule come before everything, and if quality is the same we believe that the prices obtained for Indian papers and imported are almost identical.

33. Yes. We have reason to believe that the prices at which foreign producers sell for export to India are in some cases unremunerative, and we attribute this to overproduction in both pulp and paper industries at the present time. This is aggravated by the present depression in the world's trade.

We feel that a proper appreciation of the position regarding the export of paper to India cannot be fully understood without reference to the wood pulp industry. Even supposing that export prices for paper to India were remunerative to a manufacturer who was not making his own pulp, but was purchasing wood pulp at a price which represented a loss to the seller, he would be making his profit at the expense of the pulp manufacturer. In many cases moreover the Mills exporting paper to India are making their own pulp but have nevertheless to base their export price on the price at which Paper Mills purchasing pulp at depressed prices are able to convert this pulp into paper for export.

Trade papers throughout the past year have stressed the fact that the present level of wood pulp prices are unremunerative to the industry as a whole. We do not think it necessary to quote these in detail at this stage but shall be glad to show extracts to the Board at a later date if required. We may however quote from an original letter recently addressed to our London Office by one of the leading firms of wood pulp merchants in London, and which has reference to the negotiations preceding the present strike in Norwegian Pulp Mills.

"It is of course rather difficult to prophesy the outcome of the present negotiations regarding the renewal of agreement made between Norwegian Pulp Mills and their employees."

"In Scandinavia the Mills are demanding a very heavy cut in wages and in view of the very unremunerative prices they at present obtain for their pulp they would naturally be quite willing to shut down for some time. Another point to be considered is that in accordance with the agreement between the Norwegian, Swedish, and Finnish Wood Pulp Associations the output of each of these countries is to be curtailed by 15 per cent., and any strike would therefore have to last more than eight weeks before resulting in an actual reduction in the calculated output for Norway."

This letter refers to what is perhaps the strongest evidence that present wood pulp prices are unremunerative to the producers in Scandinavia. Nego-

tiations relating to a restriction in output took place at Copenhagen in October last, the conference being attended by representatives from Sweden, Norway, Finland, Germany, Austria, and Czecho-Slovakia. A further conference took place at Malmo, and eventually the above countries agreed to a reduction of 15 per cent. in output with effect from 1st October last. The output of these six countries is estimated at 3,000,000 tons per annum, so that the reduction would represent a quantity of 450,000 tons.

The serious situation which led to this agreement to curtail production is indicated by the fact that the price for Unbleached Sulphite Pulp in January 1926 was Kr. 345 f. o. b. Oslo while in September 1930 the corresponding figure was Kr. 190, i.e., a reduction of 45 per cent.

Apart from the above we are ourselves in possession of the cost figures of a Scandinavian Pulp Mill from which it appears that the cost, including a remuneration of 5 per cent. on capital, amounts to £12 19s. 3d. c.i.f. Calcutta. We have recently been offered first quality Easy Bleaching Sulphite Wood Pulp from Scandinavia at £10 10s. and American Easy Bleaching Shredded Pulp at £9 per ton. Similarly we have been offered Scandinavian First Quality Strong Sulphite at £9 15s., and American Strong Unbleached Shredded Sulphite Pulp as low as £8 15s. per ton c.i.f. Calcutta.

The cost figures we have obtained show that wood alone represents a cost of Rs. 70-12 per ton pulp at Exchange 1/5½, while the freight to India is approximately Rs. 24-4. This gives the cost for wood and freight alone as Rs. 95 or approximately £7. It will be seen that the balance available on present export prices to India for fuel, labour, repairs, depreciation, interest, etc., is extremely small.

In conclusion we may mention one or two specific instances of Companies which have incurred losses during recent years.

A/S Risor Traemassefabriker.—This Mill produced 46,217 tons in 1929 showing a trading loss for the year of £60,295.

A/S Borregaard has temporarily closed the Bamble Sulphate Mill at Porsgrund the reason published being that the prices of sulphate Pulp having dropped below production costs continued working merely meant further loss. This mill has a production of 7,000 tons.

The Canada Power and Paper Corporation.—On 25th March, 1931, the president admitted to the shareholders that the Corporation had not earned during the first two months of this year the interest on its mortgage bonds, and that it is facing a crisis which made financial re-organization imperative. He further stated that 60 per cent. of the Company's equipment was lying idle. The Corporation has assets amounting to \$212,974,611.

34. Foreign competition is keenest in the ports of Bombay, Karachi, Madras, and the Malabar Coast.

Competition is keener in these ports than in Calcutta owing to their distance from the chief Indian Mills, which are situated in the vicinity of Calcutta. It is therefore easier for foreign paper to compete, on account of the additional freight charges which have to be paid by the Indian Mills, and also by reason of the fact that the advantages of prompt supply and control of prices which the Indian Mills enjoy in Calcutta are more difficult to arrange in Bombay, Madras, etc.

35. There is a difference in price between bamboo paper and paper made from other indigenous materials and we would refer the Board to para. 7 (b) of our letter dated 8th July, 1930, to the Government of India (copy of which was sent to the Board with our letter of 27th April, 1931). The paragraph referred to has some bearing on this question as far as it is affected by bazar trading facilities. In addition, even with our mixed furnish of bamboo and wood pulp, our quality undoubtedly still suffers to some extent in comparison with qualities made wholly or partly from Sabai Grass possessing bulking features which the bazar has so long been accustomed to. If however the bamboo paper industry is enabled to develop and to equip itself with such adequate machinery as experiments may determine to be

necessary, then with a standing in the market on a level with older Mills, we think it reasonable to hope that bamboo paper would not suffer any difference in price due to quality.

36. There has been no marked variation in the quality of the various classes of paper produced by us since Protection was granted. There has however been a slight increase in the percentage of higher grades, as opposed to inferior grades such as Badami, etc. This was foreshadowed in the evidence we gave in 1924, as, previous to that date, the proportion of inferior grade papers was abnormally high on account of difficulties previously experienced in the development of what was then a new enterprise.

Apart from this feature the only change has been a gradual improvement in the general quality of our production due to increased experience and improved practice. No new classes of paper have been included in our range of Production.

37. In our answer to Question 25 we have already referred to the increase in the import figures for Printing other than Newsprint which is exempted from protection. We now give the following further figures from the Statement of Sea Borne Trade, illustrating the marked increase in imports under this head for 1928-29 as compared with 1927-28.

In 1927-28 imports were 4,086 tons at an average rate of 2.49 annas per lb. while in 1928-29 9,463 tons were imported at an average rate of 2.16 annas per lb., these figures representing an increase in quantity of 132 per cent. combined with a decrease in price of 13.2 per cent.

Increase between 1927-28 and 1928-29 by countries for Printing other than Newsprint were as follows: (It should be noted that the figures consist of protected and unprotected papers combined, as separate figures are not published in the Statement of Sea Borne Trade. The total increase in the protected class between the two years amounted however to only 1,337 tons, so that 80 per cent. of the combined increase represents unprotected papers). Alongside the figures for the increase we have shown the percentage represented by such increase on the 1927-28 figures.

Country.	Increase in Imports between 1927-28 and 1928-29.	Percentage of such increase on imports for 1927-28.
	Tons.	
Norway	2,423	173%
British Empire	1,329	35%
Austria	1,137	173%
Germany	903	64%
Czecho-Slovakia	380	280%
Other countries	542	15%
Total	6,714	61%

The percentage increase in the total represents 132 per cent. increase in the case of unprotected, and just under 20 per cent. in the case of protected papers.

We are perhaps less directly affected than some other Mills as our output is smaller and we manufacture a smaller proportion of the lower grades which are most affected by this competition. It is nevertheless inevitable that anything which affects the Industry as a whole should also affect us to some extent.

Accepting the decision of the Board in 1927 that the percentage of Mechanical Pulp should be determined on the basis of the Fibre Content, we would accordingly suggest that the minimum percentage of Mechanical Pulp

required to exempt Printing Paper from the Protective Duty should be increased from 65 per cent. to 75 per cent., thus approximately reverting to the original definition of 65 per cent. of the total weight.

We feel some diffidence in referring to the practical tests for determining the Mechanical Content as we know that this subject has been very fully explored by the Customs Authorities. At the same time it may not be out of place to mention to the Board that a new Quantitative Determination Test has been very recently evolved by Doctors August Nell and Fritz Holder, of the Chief Scientific Laboratory of the Waldhof Pulp Mills. We are informed by an independent consulting Chemist in England that he finds the method very satisfactory and that it is accurate within a tolerance of $1\frac{1}{2}$ per cent. to 2 per cent. if conditions are strictly standardised. We accordingly enclose a copy of an Article from the World's Paper Trade Review of 13th March, 1931, which describes the manner in which the test is performed and which we think will be of interest to the Board.

38. No essentially new processes of manufacture have been adopted by us since 1923-24. Various modifications of a technical nature have been made in the manner of operating our plant, and in some sections of the plant alternative types of machinery have been installed for experimental purposes. As however our experiments are not yet completed such machines are being used at present as auxiliaries to our original plant, which remains substantially unchanged.

Apart from the additions to power plant to which reference has been made in answer to question No. 24, and experimental plant which has been described in our Answer to Question 11 the only important addition to our plant has been the installation of a new paper machine in 1927. This machine, together with auxiliary plants such as Beaters, Cutters, Bleaching Towers, etc., was installed in order to make our Mill an economic unit.

As we explained in our letter of 8th July last to the Department of Commerce, copies of which are in the possession of the Board, this was essential if the Company was to continue its experimental work.

This fact was recognised by the Board at the previous Enquiry as is shown in paragraph 127 of their Report issued in 1925. The result of adding a second machine is clearly illustrated as far as our manufacturing cost is concerned in our reply to Question No. 47.

39. The sums spent by us on extension or alteration of plant since 1923-24 have been as follows:—

	Rs.	A.	P.
1924-25	—68,567	13	11
1925-26	— 1,182	11	4
1926-27	6,583	3	0
1927-28	9,20,512	6	0
1928-29	37,886	0	9
1929-30	35,904	9	3
1930-31	17,453	7	0
	<hr/>		
	9,48,589	0	9

The minus figures shown against the years 1924-25 and 1925-26 have been shown in order that the total expenditure given in this answer will coincide with the increase in the block value of our property as shown in answer to Question No. 41 and in the Balance Sheets we enclose as desired in Question No. 45. These minus figures consist principally of the sum of Rs. 54,064 returned to the Company in 1924-25 by the Eastern Bengal Railway, this being the amount by which the sum originally deposited by the Company towards the construction of the siding, was in excess of the actual proportion of cost payable by the Company. In addition to this, one or two items were sold and written off from the Company's block.

Of the above total the manner in which the money was spent is as follows:—

	Machinery.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.
1. Power Plant . . .	1,32,352	14	7	927	6	0
2. Pulp Plant (Bamboo) .	86,803	3	0	63,577	13	10
3. Paper Plant . . .	4,51,393	9	2	71,215	1	8
4. Water Supply . . .	56,018	10	4	—		
5. Plant for Imported Pulp . . .	16,207	13	9	—		
6. Workshop Machinery.	7,229	7	8	—		
7. Miscellaneous . . .	7,128	0	6	2,290	5	10
8. Staff Quarters and Amenities for Labour . . .	—			54,479	9	0
9. Erection Costs including interest on expenditure until new plant commenced production .	37,911	2	2	8,058	15	8
	7,95,044	13	2	2,00,549	4	0
				Rs.	A.	P.
Total machinery at Naihati as above .				7,95,044	13	2
Total Buildings at Naihati as above .				2,00,549	4	0
Furniture at Naihati . . .				2,997	5	7
Railway Siding . . .				48,361	3	2
Motor Car . . .				707	8	0
Laboratory Equipment . . .				1,372	14	4
Motor Launch . . .				7,939	4	6
Furniture in Forest areas . . .				352	14	0
Addition to Jaitpura Lease . . .				620	0	0
Machinery in Forest areas . . .				1,068	14	0
Building in Forest areas . . .				6,336	12	0
				9,48,589	0	9

Of the above total the principal expenditure was made in 1927-28 and the manner in which this was spent is as follows:—

	£	s.	d.
Cost of Machinery purchased in England, f.o.b. U. K. Port . . .	34,820	15	2
Freight . . .	2,250	0	2
Total cost c.i.f. Calcutta . . .	37,070	15	4

	Rs.	A.	P.
Equivalent cost at average rate of remittances which was between 1/5-27/32 and 1/5-7/8	4,98,143	3	0
Insurance on the above	2,172	2	0
Duty on the above	12,397	2	0
Landing and Transport to Mill	6,556	7	6
Machinery and Materials purchased locally	1,38,029	4	6
Buildings purchased locally	1,68,195	6	6
Local labour and Supervision	34,423	11	9
Miscellaneous Local Expenditure	15,039	12	4
Interest	32,050	6	10
Cost of erection Engineer from England	12,058	3	7
	<hr/>		
	9,19,065	12	0
Subsequently paid, for machinery purchased from England	1,446	10	0
	<hr/>		
	9,20,512	6	0
	<hr/>		

Money spent in the remaining years was as follows:—

	Spent in England.		Spent in India.	
	Rs.	A. P.	Rs.	A. P.
1926-27			6,583	3 0
1928-29	23,093	12 10	14,792	3 11
1929-30	27,893	13 8	8,010	11 7
1930-31	8,709	0 0	8,744	7 0

40. We do not contemplate any important replacement or extension of plant in the immediate future. Our Plant for power, Water Supply and the manufacture of Paper is now sufficient to make our Mill an economic unit.

In this connexion we have had under consideration for some time the possibility of installing plant to manufacture our own Bleach. We are not yet however entirely satisfied that our requirements are sufficiently large to enable us to do so economically. This consideration coupled with the financial position of the Company has led to the project being held in abeyance, and, moreover, there has been a marked reduction in the cost of Bleaching Powder during recent years.

Apart from the above we look forward eventually to an extension of the pulp side of our Mill which will render us independent of imported wood pulp. The experiments we have been conducting for the past seven years have not yet enabled us to decide finally on the exact nature of the plant which will be most suitable, and it would be premature to instal further plant until this essential point has been finally decided. There is further the difficulty of finance. From the Company's Balance Sheet as at 31st March last it will be noted that the Company still owes Rs. 20 lakhs in addition to its Capital, and the possibility of raising additional funds for new plant is entirely dependent on the question of further adequate protection being afforded to the Industry. We are moreover of opinion that the general depression in trade, coupled with unsettled political conditions in India, may render it difficult to obtain further capital unless any additional protection which may be given is guaranteed for at least 10 years, and is on a scale sufficient to inspire confidence in the investing public.

41. The block value of our property as it stood in our books on 31st March, 1931, is as follows:—

	Rs.	A.	P.	Rs.	A.	P.
(a) Patent Rights . . .	3,80,000	0	0			
				3,80,000	0	0
(b) Permanent Leasehold at Naihati . . .	1,15,609	10	0			
Land at Jaitpura . . .	3,449	0	3			
				1,19,058	10	3
(c) Buildings at Naihati . .	7,19,636	2	3			
Staff Quarters at Naihati . . .	1,56,508	9	7			
Buildings in Forest Areas . . .	7,465	3	7			
				8,83,609	15	5
(d) Machinery at Naihati . .	11,49,476	13	9			
Machinery in Forest Areas . . .	3,432	10	4			
				11,52,909	8	1
(e) Railway Siding at Naihati . . .	55,259	15	3			
Furniture at Naihati . . .	8,188	4	7			
Furniture and Fittings in Calcutta Godown . .	407	1	7			
Motor Car at Naihati . . .	623	0	3			
Furniture in Forest Areas . . .	1,018	3	3			
				65,496	8	11
Grand Total . . .				26,01,074	10	8

42. We had anticipated this or a similar question, and before the commencement of the inquiry we had written to England for estimates which would enable us to give the Board the desired information. These have only recently been received, and we regret it has not been possible within the time allowed by the Board to complete the necessary calculations. We are, however, proceeding with this question and hope to send our reply at an early date.

We trust that the Board will approve our action in delaying our reply to this question in preference to submitting hastily compiled figures which we might subsequently be obliged to correct.

43. (1) Depreciation has been written off as follows:—

	Rs.
1924-25	2,43,569
1925-26	2,43,728
1926-27	2,47,056
1927-28	3,03,315
1928-29	3,37,051
1929-30	3,40,370
1930-31	3,41,297
	<u>20,56,386</u>

(2) No Reserve Fund has been created during the period.

44. (a) The Paid up share Capital ranking for dividend has remained unchanged at Rs. 30,00,000 throughout the period.

(b) No dividends have been distributed during the period.

45. As requested we enclose copies of our Balance Sheets from 31st March, 1924 to 31st March, 1931 inclusive.

46. No Debentures have been issued by the Company at any time.

A loan of Rs. 10,00,000 was however raised to finance the extension of Plant carried out in 1926-27. This loan bears interest at $6\frac{1}{2}$ per cent. per annum and was borrowed as required. The dates on which the various instalments were paid are as follows:—

	Rs.
26th March, 1926	1,00,000
26th March, 1927	4,00,000
28th September, 1927	3,00,000
19th December, 1927	2,00,000
	<hr/>
	10,00,000
	<hr/>

On 1st November 1930 a sum of Rs. 3,00,000 was repaid to the lenders, leaving a nett amount of Rs. 7,00,000 on loan on 31st March, 1931. As the loan was made for a maximum period of 7 years from the date of the first cash advance, the balance is repayable before 26th March, 1933.

47. Forms I and II have been duly completed and appear on G. & H. at end.

“ *Other Chemicals* ” include Rosin, Alum, Soda, Starch, Glue, Dyes, and sundries.

“ *Miscellaneous* ” includes the following items:—

Packing charges.
Bank Charges.
Bill Stamps and Collection Charges.
Calcutta Godown Expenses.
Charges General.
Insurance.
Printing and Stationery.
Law Charges.
Rent and Taxes.
Manager's Commission.
Audit Fees.
Brokerage and Dustoorie.
Staff Bonus.
Discount.
Telegrams.
Trade License.
Travelling.
Bombay Charges.

The following items of Expenditure only are excluded from the forms:—

Establishment and/or Secretaries' Allowance and Commission.
Bamboo Planting Expenses.
Interest.
Depreciation.

48. The following statement represents our works cost per ton dry Bamboo pulp during the past year. The figures shown are therefore 10 per cent. higher in all cases than the corresponding cost per ton of Commercial Air Dry Pulp containing 10 per cent. moisture.

	Rs.
(1) Bamboo	100.00
(2) Sulphur	31.01
(3) Magnesite	23.25
(4) Coal	17.37
(5) Wages	23.54
(6) Stores	14.18
(7) Supervision	4.30
(8) Miscellaneous	4.85
Total	<u>218.50</u>

This cost of Rs. 218.5 per ton dry pulp is equal to Rs. 196.6 for Commercial air-dry pulp containing 10 per cent. moisture. At exchange $1/5\frac{1}{4}$ this equals approximately £14.11.

The above figures have been calculated as follows:—

- (1) *Bamboo*.—We have taken a yield of 44 per cent. dry pulp which means that 2.273 tons of Bamboo are required for one ton pulp. The rate taken is Rs. 44 per ton which is a fraction above our average cost for the past two years.
- (2) *Sulphur*.—In our answer to question No. 17, we have shown that the quantity of Sulphur consumed during the year 1930-31 amounted to approximately 14 per cent. of the weight of the bamboo treated. Taking 2.273 tons as the quantity for bamboo required per ton dry pulp, it follows that 6.36 cwt. of sulphur would be required for 1 ton dry pulp. The cost per cwt. of sulphur is Rs. 4.14, and multiplying this by 6.36 we get Rs. 31.01 per ton pulp.
- (3) *Magnesite*.—The quantity required per ton bamboo treated, as shown in our answer to question No. 17, is 9.2 per cent. Multiplying this by 2.273, we calculate that 4.18 cwt. magnesite is required for 1 ton dry pulp. The cost per cwt. of Magnesite is Rs. 5.9 and multiplying this by 4.18 we get Rs. 23.25 per ton pulp.
- (4) *Coal*.—The total coal used during the 12 months ending 31st March, 1931, was 15,390 tons, representing an average of 1,282 tons per month. We calculate that this was used as follows:—

	For Pulp. Tons.	For Paper. Tons.
Steam in Turbine (see answer to question 24)	73	427
Paper Machines, drive and drying	—	310
Lighting, etc.	—	30
Week-end loss, Pumps and Steam auxiliaries	20	40
Coal used for general purposes	—	20
Total	<u>93</u>	<u>827</u>

This amounts to 920 tons leaving 362 tons which may be taken as the quantity used in cooking the Pulp. The average monthly quantity of bamboo consumed during the year 1930-31 (*vide* answer to question 5) was 372 tons per month. At 44 per cent. yield this represents 163.7 tons dry pulp, and the coal used for cooking purposes was therefore 2.21 tons per ton of dry pulp. The 93 tons shown for power for Pulp as above represents a further .57 tons so that the total consumption per ton dry pulp was 2.78 tons. Multiplying this by Rs. 6.4 which is the cost of the coal, we arrive at Rs. 17.37 as the cost per ton dry pulp.

- (5) *Wages*.—For the six months ending 31st March, 1931, the wages paid by us in connexion with pulp plant were as follows and average monthly production of pulp was 167.9 tons.

(The figures shown are the average wages paid during the period.)

	Total wages paid. Rs.	Proportion of wages applicable to pulp as shown in subsequent Notes. Rs.
Bamboo Crusher	1,402	1,402
Acid plant	415	415
Digesters and Blow-Pits	566	566
Washing plant	432	216
Boilers	1,083	385
Carrying coolies	1,937	968
Total	5,835	3,952

Dividing this by a monthly production of 167.9 tons dry pulp, we arrive at a cost per ton dry pulp of Rs. 23.54.

With the exception of Washing plant, Boiler plant and carrying coolies the wages are directly allocated to the departments concerned, and these departments are exclusively engaged in the production of pulp.

The wages shown under Washing Plant include wages paid on the washing and straining plant in which our bamboo pulp is treated, and they also include the wages paid on breaking up Wood Pulp and preparing it for the Bleaching Towers. Exact allocation is impossible but we consider that 50 per cent. is a reasonable proportion to attribute to the Pulp Section.

In the Boiler plant, we consider the only reasonable means of allocation is in proportion to coal consumed. We have already shown that our monthly consumption of coal was 1,282 tons of which 455 tons were used in pulp production. We have therefore allocated the wages for this section accordingly.

In the case of carrying coolies we maintain a general force of coolies for handling work in the mills, and actual allocation of wages for the handling of different materials is not kept. We estimate, however, that approximately 50 per cent. of the total handling work in the Mills relates to Bamboo, Sulphur and Magnesite, and we have accordingly allocated wages on this basis.

- (6) *Stores*.—The consumption of stores for the production of pulp during the six months ended 31st March, 1931, was as follows:—

	Value of total stores consumed.	Proportion of consumption applicable to production of pulp.
	Rs.	Rs.
Crusher	1,057	1,057
Acid plant	361	361
Digesters	664	664
Washing plant	332	166
Boilers	376	133
Total	2,790	2,381

The proportion applicable to pulp has been calculated in the same manner as shown above for wages, and dividing the total of Rs. 2,381 by 167·9 tons pulp, we arrive at a figure of Rs. 14·18 per ton dry pulp.

We feel that our action in taking figures for the last six months for wages and stores calls for some explanation. It will be noted that the average consumption of bamboo during these six months has been higher than the average of the past 12 months, in spite of the fact that production was seriously affected during February of this year, when our Thompson Boiler was closed for 10 days for overhaul and inspection, and cooking operations were almost entirely suspended because steam was not available. As we attribute the higher production during these six months to the benefit derived from experimental work, we feel we are justified in taking the slightly improved figures in calculating the cost per ton pulp as required by the Board.

- (7) *Supervision*.—Of our European staff, the two machinemmen are exclusively concerned with the paper side of the mill. Our Assistant Manager also takes no active part in connection with the pulp side of the mill except when the Manager is absent or on leave. It is difficult to estimate what proportion of the Manager's and Engineer's salary should be allocated to pulp and what proportion to paper. As an arbitrary figure must be taken, we have allocated one-third for the Manager and 20 per cent. for the Engineer which we consider reasonable. This results in a monthly cost of Rs. 723 and dividing this by 167·9 tons, we obtain our figure of Rs. 4·30 per ton dry pulp.
- (8) *Miscellaneous*.—Practically all other wages, materials and stores relate exclusively to paper, as also do the miscellaneous items of expenditure. We consider however that a proportion of the following items should be allocated to pulp as shown below. The figures are for the 6 months ending 31st March 1931.

	Total Expendi- ture.	Proportion allocated to Pulp.
General Engineering Wages	550	} One-fifth.
General Engineering Stores	739	
Miscellaneous Wages	2,208	
Miscellaneous Stores	584	
Total	4,081	816

This allocation is arbitrary but we think it is, if anything, on the high side as far as Pulp is concerned, and represents a cost of Rs. 4.85 per ton Dry Pulp on 167.9 tons monthly production.

The Pulp to which the above cost figures relate is comparable as regards quality with Prime Easy Bleaching Sulphite Wood Pulp. It is not however directly comparable with wood pulp in the form in which this is ordinarily sold. It will be appreciated that as all our Bamboo is converted directly into paper we do not convert it into such intermediate form, and we have therefore no figures available for the cost which this additional process would entail.

49. We do not consider that our Works cost for 1930-31 is capable of any marked reduction with our mill as at present equipped. We hope that further economies may be effected from time to time, particularly in the pulp section. As however no specific economies are in sight at present we are unable to furnish an estimate of what further reduction in the total cost we are likely to obtain. In this connection, moreover, it must be remembered that any reduction in our cost of production of bamboo pulp would represent a relatively small reduction in total works' cost per ton of paper.

Furthermore we would point out that progress in the utilisation of bamboo increases the consumption of this material and reduces the proportion of wood pulp. As the latter is cheaper at the present time it follows that progress in the pulp side of our mill tends to increase the total cost per ton paper.

This question does not specifically refer to the cost at which we estimate we could produce bamboo pulp with extended plant, but we believe that this information will be desired by the Board. In our answer to Question 11 we have indicated the economies we regard as definitely within sight if our pulp plant were extended in a suitable manner. In order to arrive at the total future estimated cost of production it is however necessary that we should know what charge per ton interest and depreciation on the necessary capital outlay will amount to. The necessary information regarding this capital expenditure has not yet been worked out for the reasons given in our answer to Question 42 and we therefore propose to submit a separate statement at an early date showing our estimated cost for producing bamboo pulp with extended plant. Meanwhile preliminary calculations indicate that this is not likely to exceed Rs. 190 per ton. This figure is calculated on dry pulp and would be equivalent to Rs. 171 per ton commercial pulp.

50. (1) The following figures represent the average value of our stock, under the headings required by the Board, for the past three years:—

	Rs.
Paper	4,42,318
Raw Materials	4,42,302
Coal and Stores	1,57,374
	<hr/>
Total	10,41,994
	<hr/>

The first item represents a valuation below cost and market rate, and the other two items are at cost.

(2) The average of outstandings in respect of goods sold by the Company as shown in the last six Balance Sheets is Rs. 4,11,285. During the past year however the average figure has been approximately Rs. 5,00,000. This we believe to be chiefly due to the depressed state of trade, which has made it difficult to realise payment on due dates, and has in some cases made

it necessary to allow credit in cases where goods were previously paid for on delivery.

51. The annual amount of Head Office expenses and Secretaries' commission is shown below. For the purpose of comparing the figures shown for different years we have shown alongside the turnover of the Company for the same year. In the last column we have shown the Head Office expenses and Secretaries' commission as a percentage on turnover, and at the foot of the statement we have also shown the percentage of Head Office expenses and Secretaries' commission on the nett profit in those years in which a profit has been made.

	Head Office Expenses & Secretaries' Commission.	Turnover.	Per cent. of Head Office Expenses & Secretaries' Commission on Turnover.
	Rs.	Rs.	Rs.
1924-25	29,252*	14,89,539	1.96
1925-26	33,388*	13,43,149	2.49
1926-27	37,698*	13,24,735	2.85
1927-28—			
First half-year	23,835*	8,29,723	2.87
Second half-year	31,206	12,82,034	2.43
1928-29	68,314	28,78,363	2.37
1929-30	63,467	26,17,654	2.42
1930-31	73,167	30,81,704	2.37

52. We are not aware as to whether conditions have changed in any respect which might lead the Board to reconsider the previous finding that with one exception the Paper Mills using Sabai grass did not satisfy the conditions laid down by the Fiscal Commission.

If however the claim for Protection is found still to depend entirely on the possibility of manufacturing paper from bamboo, we consider the following grounds justify its further continuance:—

- (a) We do not think there is any question whatever in regard to the supplies of bamboo, and that consequently the industry possesses a natural advantage in the existence of an abundant supply of suitable raw material.

With regard to power, we have shown in our foregoing answers the extent of economies effected since protection was granted, and in consequence we claim to have installed machinery and plant designed to secure the highest steam efficiency. In addition we claim to possess the advantage of cheap coal supplies.

There is an abundant labour supply, and, here again, our figures point to the extent to which it is hoped it will be possible to increase Indianization, towards which our efforts are being directed.

We have shown that the demand for paper in India has, except during the recent depression, consistently increased year

(* Up to 30th September, 1927, the Secretaries charged out-of-pocket expenses only as shown. The figures from 1st October, 1927, onwards represent the total of Head Office expenses and the Secretaries' remuneration.)

by year and in view of the large quantities still being imported we claim that a large home market exists. We further claim that the present low consumption per head of population, as compared with other countries, indicates the possibility of immense ultimate expansion.

- (b) Although owing to the limited nature of the Protection previously granted, the utilization of bamboo as a paper making material may not be so far advanced as was hoped for when Protection was sought, a very considerable amount of experimental work has been done. Time and money have been spent on plant designed to achieve the object for which Protection was granted. All of this, together with the results obtained and in sight, will undoubtedly be lost without the help of continued Protection. We cannot see the possibility of any development, and indeed we have every reason to fear the closing down of the industry should Protection be withdrawn. Such an event would, we believe, be a calamity and entirely against the interests of the country. So far as our Company is concerned we think the financial position as disclosed is practical evidence of the necessity for the further continuance of Protection.
- (c) With regard to the question as to whether the industry will eventually be able to dispense with protection, the previous Board desired further evidence as to what extent the cost of production could be brought down. They gave certain figures at the end of Chapter V of their Report which however were based on the assumption that we would be able to double our output on an all bamboo basis. For reasons already described this has not been possible. We claim however that the Board's expectations, as stated in their Report, have nevertheless been substantially fulfilled, and that the figures we have given justify our belief that the industry will eventually be able to dispense with Protection.

53. (i) We consider continued Protection should be given in the form of Customs Duties on imported Pulp and Paper.

We desire to continue our exploratory work, and to endeavour to bring it to a successful conclusion at a date which will not be too late for India to reap the advantage when the long looked for scarcity in the world's supply of pulp materials takes place. We agree regarding the difficulty of forecasting such date with any degree of certainty, but we consider that the industry should adopt the slogan "Be Ready in Time".

Our Company's financial position however is a matter which cannot be disregarded, and the handicap under which we suffer must be borne in mind. We therefore request the Board to make the period of Protection sufficiently long—say 10 years—so as to give confidence and time to arrange for the finance which will be necessary to carry out the work desired.

(ii) We have already given our suggestions with regard to a duty on imported pulp in our reply to question 27. In the same answer we have discussed the additional duty on paper which we consider would be necessary and have also set out the grounds on which our views are based.

In addition, on the general grounds we have already placed before the Board, we consider that the present protective tariff of one anna per lb. is the minimum which will enable us to continue our efforts to achieve the objects we desire.

(iii) We do not suggest any alteration in the classes of paper which should be protected, except that, as mentioned in our reply to Question 37, we consider the existing minimum percentage of mechanical pulp required to exclude Printing Paper from the Protective Duties should be raised from 65 per cent. to 75 per cent. on the Fibre Content.

STATEMENT A.

Cost of bamboo delivered at Naihais (per ton) (see Answer No. 9).

	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Rent and royalty	3 5 4	3 5 4	3 5 4	3 5 4	3 5 4	3 5 4
Cutting				6 10 8	6 10 8	6 10 8
Carting, rafting and delivery to station yard	26 8 8	22 13 3	23 8 5	4 2 8	4 2 8	4 2 8
Bundling and despatching				8 2 8	8 2 8	8 2 8
Contractors' overhead, establishment, supervision and profit (by difference).				2 4 11	4 5 1	2 12 0
Total cost f.o.r. despatching station	29 14 0	26 2 7	26 13 3	24 10 3	26 10 5	25 1 4
Freight	15 5 0	14 14 0	14 2 6	14 7 6	12 4 2	14 0 6
Forest Manager's salary and establishment, including travelling expenses.	8 5 0	5 6 0	3 14 2	4 0 10	4 10 11	4 11 2
Total cost	53 8 0	46 6 7	44 14 5	43 2 7	43 14 6	43 13 0

NOTE.—All the above figures are per ton dry bamboo after the elimination of all free moisture. Air dry bamboo (i.e., bamboo well dried in the sun for 10/14 days) of the species we purchase contains between 14 per cent. and 20 per cent. of moisture.

STATEMENT B.

Statement of Purchases of easy bleaching Sulphite Wood Pulp (see Answer No. 12).

	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931-32.
	Tons. 600	Tons. 500	Tons. 2,100	Tons. 3,000	Tons. 4,500	Tons. 2,400	Tons. 3,250	Tons. 2,400
Approximate cost f.o.b. Europe	£ s. d. 13 1 6	£ s. d. 13 10 6	£ s. d. 13 14 0	£ s. d. 13 7 5	£ s. d. 12 6 6	£ s. d. 11 3 6	£ s. d. 11 15 0	£ s. d. 11 7 3
Approximate freight and insurance	1 16 0	1 16 0	1 16 0	1 16 0	1 16 0	1 16 0	1 16 0	1 16 0
Average contract price London Agent's and Broker's com- mission at 1½ per cent.	14 17 6 0 4 5	15 6 6 0 4 7	15 10 0 0 4 8	15 3 5 0 4 7	14 2 6 0 4 3	12 19 6 0 3 11	13 11 0 0 4 1	13 3 3 0 3 11
Total cost c.i.f. Calcutta	15 1 11	15 11 1	15 14 8	15 8 0	14 6 9	13 3 5	13 15 1	13 7 2
* Average exchange rate for the year	1/5-26	1/6-04	1/5-94	1/5-91	1/5-97	1/5-88	1/5-80	1/5-80
C.i.f. Rupee price at the above rate of exchange.	Rs. A. P. 210 0 0	Rs. A. P. 206 15 0	Rs. A. P. 210 8 0	Rs. A. P. 206 6 0	Rs. A. P. 191 8 0	Rs. A. P. 176 13 0	Rs. A. P. 185 7 0	Rs. A. P. 180 2 0
Landing charges	2 12 0	2 12 0	2 12 0	2 12 0	2 12 0	2 12 0	2 12 0	2 12 0
Transport charges	2 11 0	2 11 0	2 11 0	2 11 0	2 11 0	2 11 0	2 11 0	2 11 0
Total cost (in rupees) per ton deli- vered mill.	215 7 0	212 6 0	215 15 0	211 13 0	196 15 0	182 4 0	190 14 0	185 9 0

* This does not represent the actual exchange on which payments were made, and which is not obtainable from our records, but the average market rate as obtained from a leading Firm of Exchange Brokers.

STATEMENT C.

Statement showing purchases of strong bleachable Sulphite Wood Pulp (see Answer No. 12).

	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931-32.
	Tons. 100					Tons. 1,800	Tons. 750	Tons. 2,400
Approximate f.o.b. price Europe .	£ s. d. 11 9 0					£ s. d. 10 16 6	£ s. d. 11 9 0	£ s. d. 10 13 3
Approximate freight and insurance mission at 1½ per cent.	1 16 0					1 16 0	1 16 0	1 16 0
Average contract price London Agent's and broker's com- mission at 1½ per cent.	13 5 0 0 4 0					12 12 6 0 3 9	13 5 0 0 4 0	12 9 3 0 3 9
Total cost c.i.f. Calcutta .	13 9 0					12 16 3	13 9 0	12 13 0
* Average exchange rate for the year	1/5-26					1/5-88	1/5-80	1/5-80
C.i.f. Calcutta price at the above rate of exchange.	Rs. A. P. 187 0 0					Rs. A. P. 172 0 0	Rs. A. P. 181 6 0	Rs. A. P. 170 9 0
Landing charge .	2 12 0					2 12 0	2 12 0	2 12 0
Transport to mill .	2 11 0					2 11 0	2 11 0	2 11 0
Total cost delivered mill (in rupees)	192 7 0					177 7 0	186 13 0	176 0 0

* Market rate as per note attached to previous statement.

STATEMENT D.
Form III.—(See Answer No. 19.)

	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
<i>Bamboo.</i>							
(1) Quantity of material used .	4,626	4,138	3,437	3,460	3,763	3,936	4,466
(2) Quantity of finished paper which material represents calculated on a yield of 42 per cent.	1,943	1,738	1,443	1,453	1,580	1,653	1,876
<i>Imported Pulp.</i>							
(1) Quantity of material used .	622	739	1,161	3,032	4,499	4,382	4,536
(2) Quantity of finished paper which material represents calculated on a yield of 86 per cent.	535	636	998	2,608	3,869	3,769	3,901
<i>China Clay.</i>							
(1) Quantity of material used .	189	133	223	360	396	447	508
(2) Quantity of finished paper which material represents calculated on yield of 75 per cent.	142	100	167	270	297	335	331
<i>Paper Cuttings.</i>							
(1) Quantity of material used .	—	13	14	24	20	174	183
(2) Quantity of finished paper which material represents calculated on yield of 80 per cent.	—	10	11	19	16	139	146
<i>Rosin and Alum.</i>							
(1) Quantity of material used .	222	204	243	389	504	490	530
(2) Quantity of finished paper which material represents.	—75	—106	—33	8	130	160	—116

STATEMENT D—*contd.*

	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
<i>Bleach.</i>							
(1) Quantity of material used	368	290	245	544	630	671	596*
(2) Quantity of finished paper which material represents.	—	—	—	—	—	—	—
<i>Other Auxiliary Materials.</i>							
(1) Quantity of material used—							
Subphur	517	537	516	405	550	606	619
Magnesite	440	453	412	379	414	416	411
Total	957	990	928	874	964	1,022	1,030
(2) Quantity of finished paper which material represents.	—	—	—	—	—	—	—
<i>Total Materials.</i>							
(1) Total quantity of materials used	6,984	6,507	6,251	8,683	10,776	11,122	11,849
(2) Total quantity of finished paper which materials represent.	2,545	2,378	2,556	4,358	5,892	6,056	6,188

* This represents consumption of Bleach and Perchloron combined.

Note.—Mill consumption figures for 1924-25 were 4,426 tons Bamboo and for 1925-26 4,533 tons. The latter figure includes however 395 tons adjustment for shortage of stock found on checking at the end of 1925. True consumption was therefore 4,138 tons as shown above. It is not known how and when the stock shortage occurred, but Chittagong Bamboo (in which shortage occurred) was not purchased in quantity till 1923. We have therefore allocated it equally between 1923-24 and 1924-25 and regarded Mill consumption figures for the latter year as 200 tons less than the true figure which has accordingly been shown in this statement as 4,026 tons.

The figures given for the quantity of finished paper represented by each material have been determined arbitrarily by applying the percentages shown for the yield from each. These percentages cannot be exactly checked and must therefore be regarded as approximate and subject to slight variation from time to time. The figures for the quantity of finished paper obtained from Resin and Alum have been obtained by difference. They should not therefore be regarded as representing the actual yield from these materials but as indicating the margin of error resulting from the percentage yield applied to other materials as above described. (In this connection a large proportion of the Alum was used in precipitating impurities from our water supply and would not in any case affect the quantity of finished paper.) The indication from the figures as given is that in 1924-25, 1925-26 and 1930-31 the actual yield obtained from the chief materials was slightly below normal. In the first two years however an error may have occurred in connection with stock adjustments and our justification for the percentage yield taken is chiefly based on the average of the 5 years from 1926-27 to 1930-31 as stated in our answer to Question 6.

STATEMENT E.

Statement of average prices realised (see Answer No. 30).

	Average nett delivered price realised.			Average freight per lb. paid on total sales (including wrapper) pies.	Average nett price ex mill.		
	Bleached.	Unbleached (including wrapper for our use.)	Total including wrapper (a).		Bleached.	Unbleached (including wrapper for our use.)	Total (including wrapper) (a).
1924-25 . . . . .	..	..	-/3/11-33	1-64	..	..	-/3/9-69
1925-26 . . . . .	..	..	-/3/9-05	1-50	..	..	-/3/7-55
1926-27 . . . . .	..	..	-/3/9-04	1-28	..	..	-/3/7-76
1927-28	(b) -/3/7-91	(b) -/2/10-56	-/3/7-22	1-28	(b) -/3/6-63	(b) -/2/9-28	-/3/5-94
1928-29	-/3/8-37	-/3/6-70	-/3/7-43	1-32	-/3/7-05	-/2/11-38	-/3/6-11
1929-30	-/3/7-33	-/3/6-22	-/3/5-95	1-25	-/3/6-08	-/2/10-97	-/3/4-70
1930-31	-/3/7-23	-/2/11-17	-/3/5-61	1-21	-/3/6-02	-/2/9-96	-/3/4-40
Average	-/3/7-75	-/2/11-10	-/3/7-38	(c) 1-32	(c) -/3/6-49	(c) -/2/9-84	-/3/6-06

(a) After deducting any allowances for quality, weight, etc.

(b) From 1-10-27 to 31-3-28 only (previous to 30-9-27 figures were not kept separately).

(c) Average freight per lb. from 1-10-27 to 31-3-31 was 1-26 pies per lb.

STATEMENT F.

Table showing net delivered selling prices obtained by the Indian Paper Pulp Co., Ltd., from 1926 to 1931 in Calcutta and selected up-country centres (see Answer No. 31).

	Cream Laid 13 × 10 × 6 lbs.					Cream Laid 13½ × 16½ × 10 lbs.					White Printing or Substance below 18 × 22 × 14 lbs.					White Printing Substance 18 × 22 × 14 and up.				
	Calcutta.	Allahabad.	Madras.	Lahore.	Delhi.	Calcutta.	Allahabad.	Madras.	Lahore.	Delhi.	Calcutta.	Allahabad.	Madras.	Lahore.	Delhi.	Calcutta.	Allahabad.	Madras.	Lahore.	Delhi.
30-6-27.	3-11½	4-1	4-1	4-1½	3-10½	3-8	3-11	3-3½	3-10½	3-9	3-11½	4-1	—	3-10½	3-9	3-8	3-10½	—	3-10½	3-7½
31-12-27	3-10	4-1½	4-1	4-1½	3-10½	3-7	3-11	3-3½	3-10½	3-9	3-9	4-1	—	3-10½	3-9	3-7	3-10½	3-9	3-10½	3-7½
30-6-28.	3-9½	4-1½	4-1	4-0	3-10½	3-7	3-11	3-3½	3-10½	3-9	3-10	4-1	3-8½	3-10½	3-9	3-7	3-10½	3-8½	3-10½	3-7½
31-12-28	3-9	4-1½	4-1	4-2	3-11-7	3-4	3-11	3-3½	3-11½	3-9	3-8	4-1	3-8½	3-10½	3-10	3-4	3-10½	3-8½	3-9	3-9
30-6-29.	3-9	4-1½	4-1	4-2	3-11-7	3-4	3-11	3-3½	3-11½	3-10	3-8	4-1	3-8½	3-10½	3-10	3-4	3-10½	3-7½	3-9	3-9
31-12-29	3-9½	4-0	4-1	3-10½	3-11-7	3-4	3-8	3-3½	3-6	3-10	3-7	3-11	3-8½	3-6	—	3-4	3-8	3-7½	3-6	3-9
30-6-30.	3-10	3-9½	4-1	3-10½	—	3-6½	3-4½	3-3½	3-6	—	3-8½	3-4½	3-7½	3-6	—	3-6	3-4½	3-7½	3-6	—
31-12-30	3-10	3-8	4-1	3-8½	3-7½	3-6½	3-6	3-3½	3-5	3-6	3-8½	3-4½	3-7½	3-4	3-4	3-6	3-4½	3-7½	3-4	3-4
1-6-31.	3-10½	3-10½	3-11½	3-11	3-11	3-5½	3-6	3-6½	3-6½	3-6½	3-7½	3-6½	3-6½	3-9½	3-8½	3-4½	3-5½	3-5½	3-0½	3-6

STATEMENT G.
FORM I.—Total expenditure incurred on the production of paper (see Answer No. 47).

	1924-25.		1925-26.		1926-27.		1927-28.		1928-29.		1929-30.		1930-31.	
	Tons.	Amount. Rs.	Tons.	Amount. Rs.	Tons.	Amount. Rs.	Tons.	Amount. Rs.	Tons.	Amount. Rs.	Tons.	Amount. Rs.	Tons.	Amount. Rs.
I. Bamboo	4,825-82	2,53,149	4,137-54	2,36,577	3,436-80	1,62,971	3,459-95	1,47,814	3,762-85	1,63,167	3,935-79	1,72,965	4,465-86	1,72,414
II. Imported Pulp	622-37	1,41,313	738-81	1,55,178	1,161-23	2,56,796	3,031-83	6,54,929	4,408-96	9,03,160	4,382-41	8,14,553	4,535-92	8,45,375
III. (a) Paper Cuttings*														
III. Auxiliary Materials—														
Sulphur	517-46	54,938	537-32	43,358	516-13	43,518	494-50	42,057	550-29	51,342	605-84	57,693	618-90	49,860
Magnesite	440-16	50,666	452-66	50,820	412-28	44,779	378-77	42,844	414-45	46-977	415-82	46,489	411-32	45,934
Bleach	367-71	81,754	289-74	59,159	245-31	47,319	544-04	84,043	630-04	84,988	670-85	80,251	596-00	95,740
China Clay	188-97	17,518	133-50	11,519	222-93	19,162	359-91	26,445	395-89	26,460	446-51	29,238	507-85	31,072
Other Chemicals		44,685		37,280		51,790		73,176		90,109		91,277		85,260
IV. Mill Labour		1,36,340		1,26,005		1,28,193		1,63,699		1,95,922		1,99,680		2,15,002
V. Power and Fuel		1,32,243		1,07,908		96,314		81,533		96,261		95,395		97,243
VI. Current repairs and maintenance.		96,950		83,598		94,055		1,43,529		1,59,890		1,74,652		1,81,395
VII. Supervision and Establishment		59,088		61,579		63,380		61,458		62,722		61,721		57,247
VIII. Miscellaneous		98,573		86,958		73,115		1,23,245		1,57,809		1,43,103		1,48,399
IX. Freight		51,636		44,834		37,674		62,533		87,603		78,154		89,692
Total		12,18,753		11,03,882		11,22,086		17,13,604		21,26,405		20,59,025		21,35,714
Total output of paper for the year in		Tons 2,544-80		Tons 2,377-97		Tons 2,586-01		Tons 4,358-50		Tons 5,891-83		Tons 6,056-03		Tons 6,187-86

* Previous to 1929-30 the quantity used was so small that consumption was not recorded separately in our Costs system, but is included in the figures for Wood Pulp.

STATEMENT H.

FORM II.—Works Cost per ton of Finished Paper (see Answer No. 47).

	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1. Primary Materials—Bamboo	99-47	99-49	63-02	33-91	27-60	28-55	27-87
2. Imported Pulp	55-63	65-26	99-30	150-27	153-29	134-51	136-62
2 (a) Paper Cuttings	—	—	—	—	—	2-13	3-26
3. Auxiliary Raw Materials—							
Sulphur	21-59	18-23	16-83	9-86	8-72	9-52	8-06
Magnesite	19-91	21-38	17-31	9-83	7-97	7-68	7-42
Bleach	32-11	24-88	18-30	19-28	14-42	13-25	15-47
China Clay	6-88	4-84	7-41	6-11	4-49	4-83	5-16
Other Chemicals	17-53	15-68	20-03	16-79	15-30	15-07	13-79
4. Mill Labour	53-58	52-99	49-57	37-60	33-25	32-97	34-74
5. Power and Fuel	51-97	45-38	38-40	18-71	16-34	15-75	15-72
6. Current Repairs and Maintenance	38-10	35-15	36-37	32-93	27-14	28-84	29-31
7. Supervision and Establishment	23-22	25-89	24-51	14-10	10-64	10-19	9-25
8. Miscellaneous—Rent, Municipal Taxes, insurance, etc.	38-74	36-19	28-27	29-42	26-78	23-63	23-98
9. Freight	20-29	18-85	14-57	14-35	14-87	12-91	14-49
	478-92	464-21	433-89	393-16	360-90	339-83	345-14
Total output of paper for the year	Tons. 2,544-80	Tons. 2,377-97	Tons. 2,580-01	Tons. 4,358-50	Tons. 5,891-83	Tons. 6,056-03	Tons. 6,187-86

STATEMENT J.
Estimate of Total Indian Demand for Paper (see Answer No. 25).

	Production of Indian Mills.	Imported Papers of kinds which are or are likely to be made in India.	Indian Demand for paper of kinds which are or are likely to be made in India.	Imported Papers which are not likely to be made in India in the near future.	Total Indian Demand.
<i>Paper and Boards.</i>					
Writing Paper	9,150	5,153	14,303	2,713	17,016
Newsprint . . . . .	....	....	....	21,541	21,541
Printing other than Newsprint	25,600	9,826	35,426	2,794	38,220
Packing Paper	2,150	....	2,150	11,568	13,718
Other kinds	3,400	....	3,400	3,487	22,058
Boards . . . . .	....	....	....	15,171	....
Total Boards and Paper	40,300	14,979	55,279	57,274	112,553
<i>Manufactures of Paper and Boards.</i>					
Old Newspapers . . . . .	....	....	....	41,134	41,134
Manufactures of Paper . . . . .	....	....	....	1,052	1,052
Manufactures of Board . . . . .	....	....	....	253	253
GRAND TOTAL	40,300	14,979	55,279	99,713	154,992

(3) *Letter dated the 4th July, from the India Paper Pulp Company, Limited.*

We have received your letter No. 378/P.-4, dated the 29th/30th ultimo, and enclose as requested a statement showing the production of our Mills during the years 1924-25 to 1930-31 inclusive in the form desired by the Board.

Five spare copies of the statement are also enclosed.



Enclosure.

Statement showing Annual Production of Writing, Printing, and other Classes of Paper by the India Paper Pulp Co., Ltd.

—	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Writing Papers	958	809	833	1,830	2,590	2,604	2,902	12,526
Bleached Printing Papers	1,106	1,154	1,294	2,007	2,642	2,710	2,691	13,604
Unbleached Printing Papers	278	254	303	301	421	482	326	2,365
TOTAL PROTECTED CLASSES	2,342	2,217	2,430	4,138	5,653	5,796	5,919	28,495
Wrapper for our own use	102	63	61	115	134	145	158	778
Other Sorts	101	98	95	105	105	115	111	730
TOTAL	2,545	2,378	2,586	4,358	5,892	6,056	6,188	30,003

None.—The chief varieties of paper included under each of the above heading are as follows:—

Writing Papers.—Cream Laid, Cream Wove, Azure Laid, Account Book, and White Cartridge.

Bleached Printing Papers.—White Printing, Antique Laid, Antique Wove, Coloured Printing, Duplicating, and Superior Badami.

Unbleached Printing Papers.—Unbleached Printing and Common Badami.

Other Sorts.—Blotting, White and Coloured Card Board.

Of the above, the first 3 items consist only of Protected Papers as none of our papers contain any proportion of Mechanical Wood Pulp. The remaining items, namely Wrapper for our own use and “Other Sorts,” are not Protected Papers.

(4) *Letter No. 386/P.-4, dated the 1st July, 1931, from the Tariff Board, to the India Paper Pulp Company, Limited.*

In continuation of my letter No. 378, dated the 29th June, 1931, I am to ask if you will be good enough to furnish certain further information and statements. For the sake of convenience in compilation and reply I have put the points in the form of a small supplementary questionnaire:—

- (1) Please prepare a statement showing the works cost per ton of bamboo pulp in 1924-25 in the same form as in your reply to Question 48 of the Board's questionnaire.
- (2) Please explain fully with reference to each item the reasons for the variations, if any, between the costs of 1924-25 and those of 1930-31.
- (3) Please prepare an estimate on the same lines as Form II (see Question 47 of the Board's Questionnaire) showing approximately what the works cost would be per ton of finished paper assuming that you used no imported pulp and that the whole of your output for 1930-31 was made from bamboo pulp manufactured in your own mills—the proportion of paper cuttings remaining the same as in 1930-31.
- (4) Please state in detail what reductions in the cost of manufacturing bamboo pulp may be expected if the output of bamboo pulp is increased to the extent indicated in Question (3) above.
- (5) In what respects would (a) the quality and (b) the marketability of the papers produced entirely from bamboo pulp differ from those of the papers produced by you in 1930-31?

I am to ask that you will be good enough to send the reply to this letter not later than the 22nd July. It should be addressed to 1, Council House Street, Calcutta.

(5) *Letter dated the 7th July, 1931, from the India Paper Pulp Company, Limited.*

We have received your letter No. 386/P.-4, dated the 1st instant and are accordingly arranging to furnish the desired statements and information not later than the 22nd instant.

Meanwhile we enclose the following further statements with 5 spare copies in each case:—

- (I) A "Corrigenda" slip* relating to the printed copies of our original reply to the Board's questionnaire.
- (II) A continuation of our Answer to Question No. 29.
- (III) A continuation of our Answer to Question No. 33.
- (IV) Our reply to Question No. 42.

In our original Answer to Question No. 49, we stated that we proposed to submit a separate statement at a later date showing our estimate of the cost of producing Bamboo Pulp on an extended scale. This statement is now ready but as the supplementary questionnaire contained in your letter under reply includes this we propose to incorporate the statement with our replies to the Board's other questions regarding Works Costs.

Enclosure.

Continuation of Reply to Question No. 29.

Since submitting our original replies to the Board's questionnaire we have received the following letter dated the 23rd June, 1931, from the Chief Commercial Manager, Rates, Development and Publicity, E. I. Railway.

* Corrections incorporated hence not separately printed here.

" With effect from 1st September, 1931, the existing special station to station rates for Paper N.O.C. in bales or bundles, both in wagon loads and on actual weight, from Naihati and *viâ* Naihati (for traffic from Titaghur and Kankinara Paper Mill) to stations on the E. J. Railway and *viâ*, appearing on pages 407 to 409 of our current Goods Pamphlet No. I (No. 12) of 1931 will be cancelled and withdrawn.

" In order to illustrate what the position will be on and after 1st September, 1931, I beg to enclose a statement showing the present and the proposed rates for paper N.O.C., O.R : W/300, L, from Naihati and *viâ* Naihati.

" The existing low rates for paper quoted on pages 407 to 409 of our Goods Pamphlet referred to above were introduced in 1924 under special circumstances which no longer exist. Moreover, in view of the heavy fall in railway earnings and the urgent necessity for conserving every possible source of revenue, the Administration cannot afford to maintain such low rates for 'Paper' any longer."

The proposed new rates constitute increases as follows in the case of the stations for which freight rates were given in our answer to Question 29.

Freight per Md. from Naihati on I. P. P. Paper.

Station.	Wagon Loads			Small Lots.		
	Rs.	A.	P.	Rs.	A.	P.
Gaya	0	0	7	0	0	8
Patna	0	2	1	0	2	8
Benares	0	1	2	0	1	6
Allahabad	0	2	0	0	2	5
Cawnpore	0	1	11	0	2	4
Lucknow	0	1	9	0	2	2
Cocanada	not affected			not affected		
Delhi	0	1	8	0	2	1
Lahore (<i>viâ</i> Saharanpur)	0	1	3	0	1	7

We have written to the East Indian Railway protesting against the proposed increase.

Continuation to Question No. 29.

We much regret that when submitting our original answer to Question 29 we omitted to give distances and rates per maund per mile as requested by the Board. We accordingly give below this information for the stations and rates quoted in our original Reply in Table "N" at end.

For purposes of comparison we also give below the rates per maund per mile which correspond to the proposed increases mentioned in the continuation of our reply to this question submitted on the 7th instant.

Station.	Miles.	Wagon Loads. Small Loads.	
		(pies).	(pies).
Gaya	272	0·026	0·029
Patna	318	0·079	0·100
Benares	409	0·034	0·044
Allahabad	492	0·049	0·059
Cawnpore	611	0·038	0·046
Lucknow	596	0·035	0·044
Cocanada	681	not affected	not affected

Continuation of Reply to Question No. 33.

Since we submitted our original replies to the Board's questionnaire the principal European pulp producing countries have apparently found that the agreed cut of 15 per cent. in production is insufficient. We think therefore that the following extract from the Paper Trade Review of 5th June, 1931, will be of interest.

" THE WOOD PULP MARKET.

Norway.—An absence of activity is still the characteristic of the whole of the wood pulp situation.

It is felt to be more necessary than ever that a further curtailment in sulphite production should be put into operation.

This restriction, it is suggested should be increased from 15 per cent. to 22 per cent. although it is understood that other figures have also been hinted at."

Subsequent to reading the above we have received a letter dated 18th June, from our London Agents reading as follows:—

" Our letter of 4th June advised you of our position with regard to the cancellation of shipments of 'Greaker' Wood Pulp.

The State Mediator of Norway is acting at the moment in connexion with the strike, but one firm informs us that there is very little chance of a prompt settlement.

Another point which will influence the mill owners' attitude with regard to the strike is that whereas last year it was decided to curtail production by 15 per cent., all the mills who agreed to this have now said they will curtail production by 30 per cent. as from 1st July of this year. This curtailment of production taken in conjunction with the strike in Norway which has now lasted three months, will of course influence prices sooner or later."

Answer to Question No. 42.

We estimate that the cost of replacing our existing Mill to-day, for Buildings and Machinery only, would be—

	Rs.
(a) Building	10,94,000
(b) Machinery	22,93,000
Total	33,87,000

It will be remembered that our Mill as it stands has a capacity of 200 tons per month for pulp and 500 tons per month for paper. We have therefore thought it desirable to prepare estimates of the cost of extending the plant sufficiently to increase the capacity of the pulp section to 500 tons per month. In this way we can arrive at an estimate of the cost of constructing a self-contained bamboo pulp and paper mill with a monthly capacity of 500 tons. Our estimate of the cost of such extension is as follows:—

	Rs.
(a) Buildings	1,23,500
(b) Machinery	6,03,000
Total	7,26,500

Combining the above, the cost (for Buildings and Machinery only) of a self-contained Pulp and Paper Mill, with a capacity of 500 tons per month is—

	Rs.
Buildings	12,17,500
Machinery	28,96,000
Total	<u>41,13,500</u>

In connexion with the above it will be of interest to refer to similar estimates prepared by us in 1924 and which will be found in volume I of the printed evidence published in that year.

On page 507 we estimated that replacement of our Mill as it stood at that time would cost—

	Rs.
Buildings	10,39,705
Machinery	20,37,654
Total	<u>30,77,359</u>

In 1926-27 the cost of installing a second Paper Machine was—

	Rs.
Buildings	1,94,294
Machinery	7,18,267
Total	<u>9,12,561</u>

Combining the two we obtain the following:—

	Rs.
Buildings	12,33,999
Machinery	27,55,921
Total	<u>39,89,920</u>

Our present estimates for replacing the existing Mill therefore show a decrease of Rs. 1,39,999 in the case of buildings and of Rs. 4,62,921 in the case of machinery.

On page 518 of the evidence printed in 1924, we estimated the cost of erecting a 5,500 ton Paper Mill at Naihati as follows:—

	Rs.
Buildings	12,00,000
Machinery	30,75,000
Total	<u>42,75,000</u>

As compared with this our present estimate for a 6,000 ton Paper Mill shows an increase of Rs. 17,500 in the case of buildings, a decrease of Rs. 1,79,000 in the case of machinery, and a decrease of Rs. 1,61,500 on the two combined.

Our estimates have been prepared in considerable detail, and are based partly on actual quotations specially obtained from England for the purpose.

and partly on our actual expenditure in 1926-27, subject to the necessary allowance for the general fall in prices which has taken place during the past five years. We therefore submit the above summary with confidence.

Apart from buildings and machinery various other items of expenditure would be incurred in erecting a Paper Mill, and we give particulars of these as follows:—

	Cost of replacing existing Mill.	Cost of extending Pulp Section.
	Rs.	Rs.
Land	1,15,000	...
Patent Rights	3,80,000	...
Railway Siding	70,000	8,500
Furniture and Fans in Quarters	15,000	...
Office and Finishing House Furniture, Laboratory and Dispensary equipment and Contingencies	24,000	...
Total	6,04,000	8,500

It will thus be seen that our estimate of the total cost of constructing a self-contained Pulp and Paper Mill with a capacity of 500 tons per month or 6,000 tons per annum is:—

	For replacing existing Mill.	For extending Pulp Section.
	Rs.	Rs.
Buildings	10,94,000	1,23,500
Machinery	22,93,000	6,03,000
Miscellaneous	6,04,000	8,500
Total	39,91,000	7,35,000

and combining these two:—

	Rs.
Buildings	12,17,500
Machinery	28,96,000
Miscellaneous	6,12,500
Total	47,26,000

In connexion with the above we should explain that our present Power Plant does not include spare units. In the event of the Pulp Plant being extended it might therefore be found advisable to add the following which have not been included above.

(1) A spare Turbo Generator (1100 K.W.) which it is estimated would cost Rs. 1,00,000.

(2) An additional Water Tube Boiler in place of the Lancashire Boiler included in our above estimate for extending the Pulp Plant. This would necessitate an additional chimney, with flues, and the total extra cost would be approximately Rs. 93,000.

If these items were included the total cost of a self-contained 6,000 ton Bamboo Pulp and Paper Mill, would be Rs. 49,19,000.

(6) *Letter dated the 21st July, 1931, from the India Paper Pulp Company, Limited, Calcutta.*

We have pleasure in handing you herewith printed copies of our replies to the supplementary questionnaire contained in your letter No. 386, dated the 1st instant. In preparing our replies it was found convenient to deal with question No. 4 as given in your letter before preparing our answer to question No. 3. It will accordingly be noted that in our replies we have transposed the numbers of these two questions and your original question No. 4 has been shown as No. 3 and your original question No. 3 as No. 4.

Enclosure.

ANSWERS TO SUPPLEMENTARY QUESTIONNAIRE CONTAINED IN LETTER NO. 386-P.-4,
DATED THE 1ST JULY, 1931, FROM THE SECRETARY TO THE TARIFF BOARD.

Answer No. 1.

Our Works Costs per ton dry Bamboo Pulp during the year 1924-25 was as follows :—

	Rs.
(1) Bamboo	124.38
(2) Sulphur	26.96
(3) Magnesite	24.84
(4) Coal	26.97
(5) Wages	23.62
(6) Stores	11.93
(7) Supervision	7.22
(8) Miscellaneous	6.82
Total	252.74

The corresponding cost per ton commercial air dry pulp containing 10 per cent. moisture is Rs. 227.47.

The above figures have been calculated as follows :—

1. *Bamboo*.—We have taken a yield of 44 per cent. dry pulp, which means that 2.273 tons of bamboo are required for a ton of Pulp. From Form I (Table "G") in our replies to the original Questionnaire it will be seen that the cost of 4,625.82 tons of Bamboo in 1924-25 was Rs. 2,53,149 which is equal to Rs. 54.72 per ton, and the figure shown above for Bamboo represents 2.273 tons at Rs. 54.72 per ton.

2. *Sulphur*.—Form III (Table "D") of our original replies shows that 517 tons Sulphur were consumed in 1924-25 and the pulp production (as shown in answer to question 3, namely 44 per cent. of 4,626 tons Bamboo consumed) was 2,035 tons. The consumption of Sulphur per ton Pulp was therefore 5.08 cwts. Form I (Table "G") shows that 517.46 tons of Sulphur cost Rs. 54,938 which corresponds to Rs. 5.308 per cwt. 5.08 cwts. at Rs. 5.308 per cwt. is equal to Rs. 26.96.

3. *Magnesite*.—Form III (Table "D") shows that Magnesite consumed during 1924-25 amounted to 440 tons. On 2,035 tons Pulp this corresponds to 4.32 cwts. Magnesite per ton pulp produced. Form I (Table "G") shows that 440.16 tons magnesite cost Rs. 50,666 which represents a cost of Rs. 5.75 per cwt. 4.32 cwts. at Rs. 5.75 is Rs. 24.84 per ton pulp.

4. *Coal*.—In the evidence given by us to the Board in 1924 (Vol. I, page 565) we stated that our consumption of coal was 4.25 tons per ton paper, and that of this 2.128 tons were used in the unbleached pulp stage. On page 601 this statement was corrected and the consumption of coal per ton paper was given as 5 tons. Increasing the original pulp figure of 2.128 tons in the proportion of 4.25 to 5 the consumption of coal per ton pulp would be 2.504 tons. The average monthly coal consumption in 1924-25 was 1.053 tons and the production of finished paper for the year was 2,544.8 tons. The actual coal consumption per ton of finished paper was therefore approximately 4.96 tons.

We regret that we have no actual records for 1924-25, which would enable us to allocate coal consumption between Pulp and Paper in the same manner as we have done for 1930-31, in our reply to question 48. We believe however that the above figure of 2.504 is approximately correct but to be on the safe side we have increased this slightly and taken 2.6 tons coal per ton pulp. The cost of coal in 1924-25, was Rs. 10.6 delivered at our Mill and multiplying this by 2.6 we arrive at the figure we have taken, namely Rs. 26.97.

5. *Wages*.—The average monthly wages paid in connexion with the pulp section of our plant during 1924-25 were as follows:—

	Total Wages Paid.	Proportion of Wages applicable to Pulp as explained below.
	Rs.	Rs.
Bamboo Crusher	1,096	1,096
Acid Plant	560	560
Digester and Blow Pits	461	461
Washing Plant	334	334
Boilers	1,124	586
Carrying Coolies	1,252	968
Total	4,827	4,005

Dividing Rs. 4,005 by a monthly production of 169.58 (2,035 tons divided by 12) we arrive at the figure of Rs. 23.62 shown above.

Crusher, Acid Plant, Digesters and Blow Pits are exclusively Pulp departments, while in 1924-25, this was also true of the Washing Plant, as our consumption of imported pulp was small and its preliminary preparation was carried out at that time in the Beater House. The whole of the wages paid in these four departments are accordingly applicable to pulp.

With regard to the boilers we have allocated the total wages paid between pulp and paper in proportion to the coal consumption for pulp and paper respectively. The figure of 586 which we have taken therefore represents Rs. 1,124 multiplied by 2.6 and divided by 4.96 tons.

With regard to carrying coolies we have taken the same figure as shown for 1930-31. In this connexion it will be realized that there has been no appreciable difference between the two years with regard to the nature and quantities of the materials handled in the Pulp section of the plant. While the balance applicable to paper on this basis is much lower for 1924-25, than for 1930-31, it should be remembered that in 1924-25 the handling charges apart from the pulp stage were chiefly confined to Bleach, China Clay, Rosin, and Alum. The quantities of these in 1924-25 were approximately half of those handled in 1930-31, while in addition we handled large quantities of imported pulp in 1930-31.

6. *Stores.*—The average monthly consumption of stores in connexion with pulp plant during 1924-25 was as follows:—

	Total Stores.	Proportion of Stores applicable to Pulp as explained below.
	Rs.	Rs.
Crusher House	1,051	1,051
Acid Plant	326	326
Digester and Blow Pits	269	269
Washing Plant	207	207
Boilers	325	170
	<hr/>	<hr/>
Total	2,178	2,023

The proportion applicable to pulp has been calculated in the same manner as detailed above for wages, and dividing the total of Rs. 2,023 by 169·58 tons we arrive at the figure of Rs. 11·93 per ton pulp.

7. *Supervision.*—In 1924-25 we had only one paper machine as against two in 1930-31 and both the Manager and Engineer were therefore able to give a proportionately larger share of their time to the Pulp Section. As we have already stated any allocation of their salaries as between Pulp and Paper must necessarily be to some extent arbitrary. We feel however that for 1924-25 a reasonable allocation is 50 per cent. to pulp and 50 per cent. to paper in the case of both the Manager and the Engineer. This results in a monthly cost of Rs. 1,225 and dividing this by 169·58 tons we obtain the figure of Rs. 7·22 per ton pulp shown above.

8. *Miscellaneous.*—The average monthly expenditure in 1924-25 for such items as are partially applicable to pulp were as follows:—

	Rs.	
General Engineering Wages	567	} Applicable to Pulp one-third Rs. 1,157.
General Engineering Stores	978	
Miscellaneous Wages	1,787	
Miscellaneous Stores	138	
	<hr/>	
Total	3,470	

This allocation is arbitrary but in view of the fact that the Mill at that time had only one Paper Machine we think it is reasonable to charge one-third of the items against pulp as compared with an allocation of 1/5th in 1930-31. Rs. 1,157 divided by 169·58 represents Rs. 6·82 per ton pulp.

The Pulp produced in 1924-25 was generally similar to that manufactured in 1930-31, but included a greater proportion of "bad cooks" which were not suitable for the manufacture of the better grades of bleached papers. Subject to this reservation the last paragraph of our reply to question No. 48 applies equally to the year 1924-25.

Answer No. 2.

1. *Bamboo.*—The decrease in the cost per ton Pulp amounting to Rs. 24·38, in 1930-31 is due entirely to our having been able to purchase bamboo from Assam at lower prices as a result of increased experience and improved methods of organization.

2. *Sulphur*.—The cost per ton pulp under this heading for 1930-31 is Rs. 4.05 higher than in 1924-25. This small increase results from our having found by experience that a slight increase in the consumption of Sulphur resulted in an almost complete elimination of the "bad cooks" experienced in 1924-25. The small increased cost of manufacture in this respect is very small as compared with the selling loss caused by Bad Cooks.

3. *Magnesite*.—The small decrease of Rs. 1.59 per ton pulp does not, we think, call for any special explanation.

4. *Coal*.—There is a reduction in 1930-31, under this head amounting to Rs. 9.60 per ton pulp. This is due to a lower price being paid for the coal, as the consumption per ton pulp in 1930-31 was actually a little higher than in 1924-25. While the reduced price we are now paying for coal is partly due to the general decline in coal prices, it is also largely due to the fact that we are to-day using a cheaper class of coal than was the case in 1924-25. This also explains the small increase in the quantity consumed.

5. *Wages*.—It will be noted that as far as the total cost per ton pulp is concerned the difference between 1924-25 and 1930-31 amounts to only Rs. 0.08 per ton pulp.

There are however differences in the case of wages for individual sections of the plant, and the reasons for these are as follows:—

Bamboo Crusher.—This shows an increase of Rs. 306 in 1930-31, which is due to the additional units of plant which have been installed in this section, and to the fact that the wages paid include not only the operation of such additional plant but also the original erection of two or three machines, and numerous adjustments and alterations which have had to be carried out on same in connexion with our experimental work.

Acid Plant and Digesters and Blow Pits.—We do not know of any special reason for the variations under these headings but would point out that if the two headings are combined the monthly saving in 1930-31 as compared with 1924-25 is only Rs. 40.

Washing Plant.—The increase of Rs. 98 per month in the total wages paid is due to the increased plant in this section. The decrease of Rs. 118 per month applicable to pulp is due to the fact that with extended plant the operating costs for individual units have decreased.

Boilers.—There is a slight decrease (Rs. 41 per month) in the total wages paid in 1930-31 although the total consumption of coal was greater. We believe that this is chiefly due to the automatic chain grate stokers which were installed with our new boiler.

The wages applicable to pulp show a greater saving (Rs. 201 per month) as the proportion of coal used for pulp in 1930-31 was smaller than in 1924-25, owing to the increased production of paper.

6. *Stores*.—It will be noted that the 1930-31 figure shows an increase of Rs. 2.25 per ton pulp as compared with 1924-25. The reason for this is that our plant is now 6 years older and it is natural that there should be a slight increase in Repairs and Replacements. This is particularly noticeable in the case of Digesters, and we may mention that during 1930-31 certain acid proof bronze fittings required renewal. These are very expensive but do not ordinarily require to be replaced except at considerable intervals.

7. *Supervision*.—The decrease of Rs. 2.92 per ton pulp shown for 1930-31 as compared with 1924-25 is due to the fact that a larger proportion of the Manager's and Engineer's time is now necessarily spent in the Paper Section of the Mill.

8. *Miscellaneous*.—This item shows a decrease of Rs. 1.97 per ton pulp in 1930-31 as compared with 1924-25. This difference is not large and being based on an allocation which is necessarily arbitrary, we are not in a position to give any reason for the difference other than can be deduced from a study of the allocation taken for the two years.

It will be noted that the total decrease in Works Costs of Dry Bamboo Pulp between 1924-25 and 1930-31 was Rs. 34.24 per ton.

Answer No. 3.

If the capacity of our Pulp Plant at Naihati were increased to 500 tons per month, we estimate that our Works costs would be as follows:—

	Rs.
1. Bamboo	94.04
2. Sulphur	20.16
3. Magnesite	19.76
4. Coal	11.29
5. Wages	12.71
6. Stores	11.34
7. Supervision	1.44
8. Miscellaneous	2.42
Total	<u>173.16</u>

This figure represents the cost per ton dry pulp, and the corresponding cost per ton commercial pulp containing 10 per cent. moisture is Rs. 155.84 per ton.

The above estimate has been prepared as follows:—

1. *Bamboo*.—The estimated cost for the season 1930-31 on an estimated quantity of 5,821 tons is Rs. 42.8.

This figure includes Rs. 17,500 for overhead. With purchases amounting to approximately 14,000 tons, there would be some increase in travelling expenses and overhead, but it is estimated that such additional expenditure should not exceed 50 per cent., viz., Rs. 8,750.

For 1930-31 the estimated overhead expenses of Rs. 17,500 amount to Rs. 3 per ton on 5,821 tons. Against this overhead expenses of Rs. 26,250 on 14,000 tons would amount to Re. 1.14 per ton, thus reducing the total cost to Rs. 41.6 delivered. Taking a yield of 44 per cent., which means that 2,273 tons bamboo are required per ton dry pulp the cost of bamboo per ton dry pulp is Rs. 94.04.

It will be noted that this calculation is based on Assam Bamboo. We are however at present experimenting with Bamboos from other sources, and the results we have obtained give us every reason to hope that with improved methods and plant in the preliminary mechanical treatment, these bamboos can be economically treated. Trial supplies of such bamboos have been purchased at Rs. 29 per ton dry weight delivered at our Mill, and we have recently received quotations of Rs. 25 from contractors. Even if Re. 1.14 is allowed for organization expenses, we are therefore confident that adequate supplies of this bamboo can be obtained at a cost of not exceeding Rs. 30 per ton, which would result in a saving of Rs. 25.85 per ton Dry Pulp.

2. *Sulphur*.—In our answer to Question 11 (page 12, column 2) we estimated the minimum saving in sulphur in sight with extended plant as 35 per cent. In our answer to Question 48 the cost of Sulphur per ton pulp in 1930-31 has been shown to be Rs. 31.01, and taking 65 per cent. of this we obtain our above figure of Rs. 20.16.

3. *Magnesite*.—The figure of Rs. 19.76 shown for magnesite is 85 per cent. of Rs. 23.25, these figures being taken from our answers to Questions 11 and 48 as in the case of sulphur.

4. *Coal*.—The figure of Rs. 11.29 shown is 65 per cent. of Rs. 17.37, these figures also being taken from our answers to Questions 11 and 48.

5. *Wages*.—Any extension of existing pulp plant would render some form of mechanical handling of bamboo essential, and we have obtained particulars of appliances which we believe would enable us to handle 14,000 tons of bamboo annually without any increase in our present labour charges for this item. Apart from handling charges the additional wages required would be relatively small, as additions to our existing acid plant, Digesters and Washing Plant, would require little additional skilled labour. The remaining items are Bamboo Crusher and Boilers. The latter would approximately increase in proportion to the additional coal used while the crusher figure in our answer to Question 48 for wages includes a great deal of labour employed for experimental work. Our figures have accordingly been taken as follows:—

	Extra per month.
	Rs.
<i>Bamboo Crusher</i> .—Increased by 100 per cent.	1,402
<i>Acid Plant, Digesters and Washing Plant</i> .—Increased by 20 per cent.	239
<i>Boilers</i> .—Coal consumption for pulp in 1930-31 was given in answer to question 48 as 93 tons for power, and 362 tons for process work, total 455 tons, or 2.78 tons coal per ton Pulp. The saving of 35 per cent. estimated in Question 11 would reduce the coal consumption to 1.807 tons per ton Pulp, which on 500 tons Pulp means 903 tons coal per month for Pulp. Multiplying 385 (<i>vide</i> 1930-31 wages in answer to question 48) by 903 and dividing by 455 we get	762
<i>Carrying coolies</i> .—No increase	Nil.
Total	2,403

Adding this figure of Rs. 2,403 to our present labour cost of Rs. 3,952 (Answer No. 48) we obtain a total labour cost of Rs. 6,355 per month. On 500 tons per month this equals Rs. 12.71 per ton pulp.

6. *Stores*.—The figure of Rs. 11.34 shown represents 80 per cent. of our present cost per ton under this heading as given in our answer to Question 48. We think that in estimating a saving of 20 per cent. per ton pulp in stores and repairs, we are taking a reasonable figure, in view of the fact that all sections of the plant would be approximately doubled while certain sections would be trebled.

In this connexion it will be noted from Form II (Table "H") that the addition of a second paper machine caused a marked reduction in Stores consumed per ton Paper. The figure for 1927-28 represents the extension period, but the figures for 1928-29, 1929-30 and 1930-31 show reductions of 25.4 per cent., 20.7 per cent. and 19.4 per cent. respectively as compared with the figure for 1926-27.

7. *Supervision*.—No extra supervisory staff would be required. This item has therefore been reduced in direct proportion to increased production (ratio 500 tons to 167.9) which gives Rs. 1.44 per ton.

8. *Miscellaneous*.—It is estimated that additional expenditure under this heading in connexion with pulp plant would not exceed 50 per cent. As the output would be approximately three times as great the cost per ton for miscellaneous items would be reduced by half, *i.e.*, they would become Rs. 2.42.

Comparing the above estimate with the cost for 1930-31 as shown in answer to Question 48 the saving per ton dry pulp is as follows :—

	Rs.
1. Bamboo	5.96
2. Sulphur	10.85
3. Magnesite	3.49
4. Coal	6.08
5. Wages	10.83
6. Stores	2.84
7. Supervision	2.86
8. Miscellaneous	2.43
Total	45.34

	Rs.
If Bamboo costing Rs. 30 per ton can be used in place of bamboo costing Rs. 41-6, the additional saving per ton pulp will be $2.273 \times \text{Rs. } 11.6$ or	25.85
Total	71.19

In conclusion we should point out that the possibility of using cheaper bamboo, as shown above, is only one of several savings we believe will ultimately be achieved. For instance we hope that the consumption of Sulphur, Magnesite and Coal will all be reduced to a greater extent than we have felt justified in taking for the purpose of these estimates while careful organization might reduce the cost of Bamboo to below Rs. 30 per ton.

Answer No. 4.

We estimate that the total Works Costs of manufacture on the basis desired by the Board in this question would be as follows :—

	Rs.
I. Bamboo	5,69,113
II. Paper Cuttings	20,181
III. Auxiliary Raw Materials—	
(a) Sulphur	1,22,007
(b) Magnesite	1,19,531
(c) Bleach	95,740
(d) China Clay	31,972
(e) Other Chemicals	85,260
IV. Mill Labour	2,43,838
V. Power and Fuel	1,30,843
VI. Current Repairs and Maintenance	2,16,603
VII. Supervision and Establishment	57,247
VIII. Miscellaneous	1,53,295
IX. Freight	89,692
Total	19,35,322

The above figures correspond to Form I (Table "G") of our replies to the Board's original questionnaire. On a production of 6,187.86 tons, the Works-Costs per ton of finished paper (i.e., corresponding to Form II) would be as follows:—

	Rs.
I. Bamboo	91.97
II. Paper Cuttings	3.26
III. Auxiliary Materials—	
(a) Sulphur	19.72
(b) Magnesite	19.82
(c) Bleach	15.47
(d) China Clay	5.16
(e) Other Chemicals	13.79
IV. Mill Labour	39.41
V. Power and Fuel	21.15
VI. Current Repairs and Maintenance	35.00
VII. Supervision	9.25
VIII. Miscellaneous	24.77
IX. Freight	14.49
Total	312.76

The figures corresponding to Form I shown above have been calculated as follows:—

I. Bamboo.—In Form III (Table "D") we have shown that the quantities of finished paper represented by Bamboo and imported pulp in 1930-31, were 1,876 and 3,901 tons respectively or 5,777 tons together. We understand from the Board's question that consumption of China Clay, Paper Cuttings and Rosin and Alum are to be taken on the basis of actual consumption during 1930-31, and the quantity of finished paper now to be obtained from Bamboo is therefore 5,777 tons. The yield of finished paper from Bamboo has been stated in our reply to Question No. 6 to be 42 per cent., and on this basis 13,755 tons of bamboo would be required to give 5,777 tons of finished paper. At a cost of Rs. 41.6 as shown in our answer to supplementary Question No. 3 this would represent a cost for bamboo of Rs. 5,69,113.

II. Paper Cuttings.—This item will remain unchanged, viz., Rs. 20,181 as in Form I.

III. Auxiliary Materials.—(a) *Sulphur.*—In our answer to supplementary Question No. 3, we have estimated the cost of sulphur per ton pulp as Rs. 20.16. As the yield of pulp from bamboo is 44 per cent. this figure represents the cost of treating 2.273 tons of bamboo. The cost of Sulphur per ton bamboo treated is therefore Rs. 20.16 divided by 2.273 or Rs. 8.87. As we are now treating 13,755 tons bamboo the total expenditure on sulphur will be Rs. 1,22,007.

(b) *Magnesite.*—The cost for treating 2.273 tons bamboo as shown in our answer to supplementary Question No. 3 is Rs. 19.76. Calculating in the same manner as for sulphur we obtain a cost of Rs. 8.69 per ton bamboo treated and a total cost on 13,755 tons bamboo of Rs. 1,19,531.

(c) *Bleach.*
 (d) *China Clay.*
 (e) *Other Chemicals.* } These remain unchanged, and the figures are copied from Form I (Table "G") of our replies to the Board's original questionnaire.

IV. *Mill Labour*.—The actual cost of labour in 1930-31 as shown in Form I (Table "G") was Rs. 2,15,002. In our reply to Question No. 48 we showed that of this Rs. 3,925 per month was applicable to pulp, i.e., Rs. 47,424 for the year. This leaves Rs. 1,67,578 as the wages paid in the paper section of the pulp. In our reply to supplementary Question No. 3 we have estimated that with extended pulp plant the wages for the pulp section of the Mill would be Rs. 6,355 per month or Rs. 76,260 per annum. Adding these figures of Rs. 1,67,578 and Rs. 76,260 we arrive at the figure we have shown, namely, Rs. 2,43,838.

V. *Power and Fuel*.—Expenditure under this heading for 1930-31 as shown in Form I was Rs. 97,243. In our answer to Question No. 48 we have shown that 93 plus 362, or 455 tons per month was applicable to pulp. This represent 5,460 tons per annum, and the cost at Rs. 6-4 per ton is Rs. 43,125, leaving Rs. 63,118 for conversion of pulp to paper. In our reply to supplementary Question No. 3, we have shown an estimated coal consumption for Pulp of 903 tons per month or 10,836 tons per annum. At Rs. 6-4 per ton this represents Rs. 67,725. Combining these figures of Rs. 63,118 and Rs. 67,725, we obtain the figure shown, namely, Rs. 1,30,843.

VI. *Current Repairs and Maintenance*.—Actual expenditure in 1930-31 as shown in Form I was Rs. 1,81,395. In our answer to Question No. 48, we have shown that Rs. 2,381 per month or Rs. 28,572 per annum was applicable to pulp, leaving a balance of Rs. 1,52,823 for the conversion of pulp into paper. In our reply to supplementary Question No. 3, we have estimated the cost under this heading as Rs. 10-63 per ton pulp, on an output of 500 tons per month which corresponds to an expenditure of Rs. 63,780 per annum. Combining these figures of Rs. 1,52,823 and Rs. 63,780 we arrive at the figure we have shown, namely, Rs. 2,16,603.

VII. *Supervision and Establishment*.—We do not consider that any additional expense under this heading would be entailed as a result of extending the pulp section of our Mill, and the figure we have shown has therefore been copied from Form I.

VIII. *Miscellaneous*.—Actual expenditure for 1930-31 as shown in Form I was Rs. 1,48,399. In our reply to Question No. 48 we have shown that Rs. 816 per month or Rs. 9,792 per annum is applicable to pulp, leaving Rs. 1,38,607 for the conversion of pulp into paper. In our reply to supplementary Question No. 3 we have estimated that the increase in Miscellaneous expenditure relating to pulp would be 50 per cent. This would increase the figure of Rs. 9,792 to Rs. 14,688, and combining this with the figure of Rs. 1,38,607 for conversion of pulp to paper we obtain our figure of Rs. 1,53,295.

IX. *Freight*.—This will remain unchanged, and has been copied from Form I (Table "G").

For the sake of convenience we attach Statements (See Tables "L" and "M" at end) showing our costs per ton for Pulp and Paper respectively in 1924-25 and 1930-31, together with our future estimated costs on an all-Bamboo basis.

Answer No. 5.

We have thought it best to answer this question by a practical demonstration, and have accordingly recently manufactured all-bamboo papers. Samples of these are enclosed, and one of them has been used by us for the printing of this evidence. We think the demonstration proves that there is no material difference in the quality and marketability of an all-Bamboo paper, as compared with papers now produced by us from a mixed furnish of Bamboo and Wood pulp. As mentioned however in some of our previous answers, we have reason to believe that new machinery, which may be installed later on as a result of our experiments, will improve our product, but it is obviously impossible for us in the present circumstances to give definite details regarding this.

STATEMENT K.

Statement showing Annual Production of Writing, Printing, and other classes of paper by the India Paper Pulp Co., Ltd.

	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Writing Paper	958	809	833	1,830	2,590	2,604	2,902	12,526
Bleached Printing Papers . .	1,106	1,154	1,294	2,007	2,642	2,710	2,691	13,604
Unbleached Printing Papers . .	278	254	303	301	421	482	326	2,365
Total Protected Classes . .	2,342	2,217	2,430	4,138	5,653	5,796	5,919	28,495
Wrapper for our own use . .	102	63	61	115	134	145	158	778
Other Sorts	101	98	95	105	105	115	111	730
TOTAL	2,545	2,378	2,586	4,358	5,892	6,056	6,188	30,003

NOTE.—The chief varieties of paper included under each of the above headings are as follows :—

Writing Papers.—Cream Laid, Cream Wove, Azure Laid, Account Book and White Cartridge.

Bleached Printing Papers.—White Printing, Antique Laid, Antique Wove, Coloured Printing, Duplicating, and Superior Badami.

Unbleached Printing Papers.—Unbleached Printing and Common Badami.

Other Sorts.—Blotting, White and Coloured Card Board.

Of the above, the first 3 items consist only of Protected papers as none of our papers contain any proportion of mechanical wood pulp. The remaining items, namely, "Wrapper for our own use" and "Other Sorts" are not protected papers.

STATEMENT L.

Comparison of Works Costs for Bamboo Pulp Actual and Estimated.

	1924-25 (Answer to Supplementary Question No. 1).	1930-31 (Answer to Question No. 48).	Estimate for 6,000 Tons Pulp output at Naihati (Answer to Supplementary Question No. 3).
1. Bamboo . . .	124.88	100.00	94.04
2. Sulphur . . .	26.96	31.01	20.16
3. Magnesite . . .	24.84	23.25	19.76
4. Coal . . .	26.97	17.37	11.29
5. Wages . . .	23.62	23.54	12.71
6. Stores . . .	11.93	14.18	11.84
7. Supervision . . .	7.22	4.30	1.44
8. Miscellaneous . . .	6.82	4.85	2.42
Total . . .	252.74	218.50	173.16*
*Or with Bamboo at Rs. 30 per ton . . .			147.31

STATEMENT M.

Comparison of Works Costs for Paper, Actual and Estimated.

	1924-25 (Form II 1931).	1930-31 (Form II 1931).	Estimate for 6,000 Ton All-Bamboo Mill at Naihati. (Answer to Supplementary Question 4).
I. Bamboo . . .	99.47	27.87	91.97
II. Wood Pulp . . .	55.53	136.62	...
II(a) Paper Cuttings . . .	...	3.26	3.26
III. Auxiliary Materials—			
(a) Sulphur . . .	21.59	8.06	19.72
(b) Magnesite . . .	19.91	7.42	19.32
(c) Bleach . . .	32.11	15.47	15.47
(d) Rosin and Alum . . .	6.88	5.16	5.16
(e) Other Chemicals . . .	17.53	13.79	13.79
IV. Power and Fuel . . .	51.97	15.72	21.15
V. Mill Labour . . .	53.58	34.74	39.41
VI. Repairs and Maintenance . . .	38.10	29.31	35.00
VII. Supervision and Establishment . . .	23.22	9.25	9.25
VIII. Miscellaneous . . .	38.74	23.98	24.77
IX. Freight . . .	20.29	14.49	14.49
Total . . .	478.92	345.14	312.76*
*Or with Bamboo at Rs. 30 per ton . . .			287.47

STATEMENT N.

Table of Freight Rates on Paper.

Station.	Distance from Naihati.	Rate per Maund per Mile from Naihati.	Distance from Calcutta.	Rate per Maund per Mile from Calcutta.
WAGON LOADS.				
	(Miles.)	(Pies.)	(Miles.)	(Pies.)
Gaya	272	0.22	292	0.45
Patna	318	0.15	338	0.44
Benares	409	0.18	429	0.44
Allahabad	492	0.15	512	0.38
Cawnpore	611	0.15	631	0.31
Lucknow	596	0.15	616	0.31
Cocanada	681	0.34	651	0.44
SMALL LOADS.				
Gaya	272	0.26	292	0.45
Patna	318	0.18	338	0.44
Benares	409	0.21	429	0.44
Allahabad	492	0.18	512	0.44
Cawnpore	611	0.18	631	0.43
Lucknow	596	0.19	616	0.43
Cocanada	681	0.34	651	0.44

WAGON LOADS.

To Delhi.

To Lahore.

From	Miles.	Rate per Maund per Mile.	Miles.	Rate per Maund per Mile.
Naihati	882	0.15	1156	0.20
Calcutta	902	0.21	1176	0.24
Bombay	957	0.17*	...	...
Karachi . . . . .	...	...	758	0.22*

*In our original reply we mentioned that the rate given was approximate only. On more exact information we have since received it appears that the correct rates per maund per mile are :

	Pies.
Bombay/Delhi	0.20
Karachi/Lahore	0.24

(7) Letter dated the 6th August, 1931, from the India Paper Pulp Company, Limited, Calcutta.

At our Oral Examination on the 1st instant, it was pointed out by the Board that there was an error in calculation at the foot of column 1 on page 6 of Volume II of our Written Evidence. In the passage concerned we stated that Rs. 10.6 multiplied by 2.6 amounted to Rs. 29.08. On reference to our Books we confirm the figures of Rs. 10.6 and 2.6, and greatly regret the subsequent error in calculation. Actually the cost of coal per ton Pulp should be Rs. 26.97 instead of Rs. 29.08.

This error necessitates the following corrections being made in Volume II of our Written Evidence. We shall accordingly be much obliged if you will kindly correct* the copies we have submitted to the Board.

Page 5, Col. 2, Answer to Question 1, Line 7.—For “Rs. 29-08” read “Rs. 26-97”.

Page 5, Col. 2, Answer to Question 1, Line 12.—For “Rs. 254-85” read “Rs. 252-74”.

Page 5, Col. 2, Answer to Question 1, Line 15.—For “Rs. 229-37” read “Rs. 227-47”.

Page 6, Col. 1, last line but two.—For “Rs. 29-08” read “Rs. 26-97”.

Page 8, Col. 1, Line 18.—For “Rs. 11-71” read “Rs. 9-60”.

Page 9, Col. 1, Line 4.—For “Rs. 36-35” read “Rs. 34-24”.

Statement “L”, Line 4, Col. 1.—For “Rs. 29-08” read “Rs. 26-97”.

Statement “J”, Line 9, Col. 1.—For “Rs. 254-85” read “Rs. 252-74”.

Please convey to the Board our regret that this error should have crept in, and accept our apology for the inconvenience caused.

(8) *Letter dated 7th August, 1931, from the India Paper Pulp Company, Limited.*

As promised at our Oral Examination on the 1st instant, we have pleasure in submitting particulars of our Works Costs for the conversion of Bone-dry Unbleached Pulp into Paper for the years 1924-25 and 1930-31.

We should explain in the first instance that Works Costs for such conversion may conveniently be divided under two main headings as follows:—

(1) *Loss of Fibre.*—In this connection it will be appreciated that the loss of Fibre (due to bleaching and mechanical losses) which takes place during the conversion of Unbleached Pulp into finished paper should properly be included as part of the conversion cost.

(2) *Cost of Materials, Labour, Coal and Other Expenditure incurred in the Conversion Process.*—1. *Loss of Fibre.*—In 1924-25 we used 4,625-82 tons Bamboo (Vol. I, Form I), which at 44 per cent. yield represents 2,035-36 tons Bone-dry Unbleached Pulp. We also used 622-37 tons Commercial Air-dry Wood Pulp (Vol. I, Form I), which is equivalent to 560-13 tons Bone-dry Unbleached Pulp. The total consumption of Unbleached Pulp (Bone-dry) was therefore 2,595-49 tons. In addition we used 188-97 tons China Clay (Vol. I, Form I). The output of paper for the year was 2,544-80 tons (Vol. I, Form I), and if we deduct 141-73 tons as representing the yield from China Clay at 75 per cent. (Vol. I, page 3, Col. 1), the yield of paper from Unbleached Bone-dry Pulp is 2,403-07 tons or 92-59 per cent., indicating a Fibre loss of 7-41 per cent.

In 1930-31 we used 4,465-86 tons of Bamboo, and 4,535-92 tons Commercial Air-dry weight of imported Wood Pulp (Vol. I, Form I). These figures correspond to 1,964-98 and 4,082-33 tons Bone-dry Unbleached Pulp respectively, making a total of 6,047-31 tons. In addition we used 182-80 tons of Paper Cuttings, and 507-85 tons of China Clay (Vol. I, Form I). If 146-24 tons and 380-89 tons (representing the yield from these at 80 per cent. and 75 per cent. respectively—*vide* Vol. I, page 3, Col. 1) are deducted from the total output of finished paper, amounting to 6,187-86 tons (Vol. I, Form I), the yield of paper from Bone-dry Unbleached Pulp is 5,660-73 tons or 93-61 per cent., indicating a Fibre loss of 6-39 per cent.

In connection with the above calculations we should, however, point out that our yield figures show a small variation from year to year. This is partly to the fact that we have no means of actually weighing, or otherwise exactly determining, the precise quantity of Unbleached Pulp obtained from our Primary Raw Materials. A further difficulty arises from the varying

quantity of moisture which is constantly present in Bamboo, and which renders minor stock adjustments necessary from time to time.

We, therefore, feel it is safer to rely on the figures obtained over an average of years, and have accordingly calculated the Fibre loss between Unbleached Bone-dry Pulp and Finished Paper for the five years 1926-27 to 1930-31 inclusive, in the same manner as for 1930-31, and find that it amounts to just under 4 per cent.

In consideration of the above we submit that the Board would be justified in taking our present average Fibre loss during the Conversion Process as approximately 4 per cent. or, to be on the safe side, $4\frac{1}{2}$ per cent.

As regards 1924-25 we believe the Board would be justified in taking the fibre loss during the conversion process as approximately $5\frac{1}{2}$ per cent. It will be clear from all that has been said regarding this subject that this figure cannot be directly substantiated, but we believe that there has been little change in our general practice during the past six years. At the same time the marked decrease in our consumption of Bleach indicates that our present practice in bleaching is less drastic, and therefore calculated to involve a smaller degree of loss than was the case in 1924-25, and it is chiefly in consideration of this point that we suggest the figure of $5\frac{1}{2}$ per cent. for 1924-25 as compared with $4\frac{1}{2}$ per cent. in 1930-31.

In 1924-25 the cost of Bone-dry Bamboo Pulp was Rs. 252.74 per ton (Vol. II, page 5, Col. 2), so that the value of 2,035.36 tons consumed was Rs. 5,14,417. The value of 560.13 tons Bone-dry Wood Pulp was Rs. 1,41,313 (Form I). The total Unbleached Dry-Pulp consumed was therefore 2,595.49 tons of value Rs. 6,55,730, representing an average value of Rs. 252.64 per ton. A Fibre loss of $5\frac{1}{2}$ per cent. is therefore equivalent to Rs. 13.89 per ton Pulp.

In 1930-31 the cost of Dry Bamboo Pulp was Rs. 218.50 per ton (Vol. I, page 40, Col. 1), so that the value of 1,954.98 tons was Rs. 4,29,348. The value of 4,082.33 tons Dry Wood Pulp was Rs. 8,45,375 (Form I). The total Unbleached Dry Pulp consumed was therefore 6,047.31 tons of value Rs. 12,74,723, representing an average value of Rs. 210.79 per ton. A Fibre loss of $4\frac{1}{2}$ per cent. is therefore equivalent to Rs. 9.49 per ton Pulp.

II. *Cost of Materials, Coal, Labour, etc.*—(1) *Bleach—Other Chemicals.*—The total consumption value of these can be taken direct from Form I, and amounts to Rs. 1,26,339 for 1924-25, and Rs. 1,81,000 for 1930-31. Dividing these by 2,595.49 and 6,047.31 tons respectively (being the Bone-Dry Unbleached Pulp consumption for the two years), the costs per ton Pulp are Rs. 48.67 for 1924-25, and Rs. 29.93 for 1930-31.

While a part of the decrease shown by these figures is due to reduced purchase rates there has been a marked reduction in the consumption of Bleach and Rosin, which are the most important items, as is shown by the following figures, which have been obtained by dividing the consumption for each year as shown in Form III by the total quantity of Unbleached Pulp consumed:—

	1924-25.	1930-31.
	Cwts.	Cwts.
Bleach	2.836	*2.364
Rosin	0.531	0.410

It will be noted that China Clay has not been included among the materials used in the Conversion process. Our reason for omitting it is that in converting Unbleached Pulp into Paper the addition of China Clay as loading is really an economy. Our figures as they stand represent the cost of converting pulp into a paper which contains no loading, and the correct result of adding loading would be to reduce the conversion cost. When costs are calculated per ton of paper this effect is automatically obtained

* This figure is actually for 1929-30, as the experiment with Perchloron renders 1930-31 figures meaningless.

by the increase in the division factor, but as this does not occur when the Pulp consumption is the division factor, we feel that the method we have followed is the best.

(2) *Labour*.—In our written evidence, Volume II, page 6, column 2, we have shown that the monthly wages applicable to Pulp for 1924-25 amounted to Rs. 4,005. This represents Rs. 48,060 per annum, and if we deduct this from the total labour figure of Rs. 1,36,340 shown in Form I, there is a balance applicable to paper conversion amounting to Rs. 88,280. Dividing this by the consumption of 2,595.49 tons of Unbleached Pulp we obtain a figure of Rs. 34.01 per ton of Unbleached Pulp.

For 1930-31 we have shown in Volume II, page 12, column 1, that the wages applicable to Paper amounted to Rs. 1,67,578. Dividing this by 6,047.31 tons the cost per ton of Unbleached Pulp is Rs. 27.71.

(3) *Power and Fuel*.—In our written evidence, Volume II, page 6, column 1, we give the consumption of coal per ton Bamboo Pulp as 2.6 tons at Rs. 10.6 per ton. Multiplying the resulting cost of Rs. 26.97 per ton Pulp, by the output of Bamboo Pulp for 1924-25 amounting to 2,035.36 tons (Vol. I, page 1, Col. 2), it will be seen that the value of the coal consumed in the pulp stage for the year was Rs. 54,894. Deducting this from the total of Rs. 1,32,243 shown in Form I leaves Rs. 77,349 for conversion from Pulp to Paper. (In this connection we should point out that in our Oral Examination we stated that for conversion of Pulp to Paper 7,345 tons coal, representing 2.88 tons per ton paper, were consumed at Rs. 10.6. This represents Rs. 76,204, and the difference of Rs. 1,145 between this figure and Rs. 77,349 consists of coke consumed in our repair shops. It is impossible to allocate this coke consumption as between Pulp and Paper, and we have accordingly allocated it arbitrarily to Paper.) Dividing Rs. 77,349 by 2,595.49 tons the cost per ton Unbleached Pulp consumed is Rs. 29.80.

For 1930-31 we have already shown in our written evidence, Volume II, page 12, column 1, that Rs. 63,118 is applicable to the conversion of Pulp to Paper, this figure having been calculated in a similar manner to the 1924-25 figure as shown above. Dividing Rs. 63,118 by 6,047.31 tons the cost per ton pulp is Rs. 10.44.

(N.B.—To avoid any danger of confusion between the various references to Coal Consumption in our written and oral evidence we give the following summary:—

	Produc- tion.	Coal consumed per ton of produc- tion.	Total coal con- sumed.	Cost per ton.	Total cost.
(A) 1924-25.					
	Tons.	Tons.	Tons.	Rs. A. P.	Rs.
Bamboo Pulp	2,035.36	2.60	5,291	10 6 0	54,884
Paper	2,544.80	2.88	7,345	10 6 0	76,204
Workshop (Coke) . . . . .	...	...	...	...	1,145
TOTAL	2,544.80	4.96	12,636	...	1,32,243
(B) 1930-31.					
Bamboo Pulp	1,964.98	2.78	5,460	6 4 0	34,125
Paper	6,187.86	1.604	9,930	6 4 0	62,063
Workshop (Coke) . . . . .	...	...	...	...	1,055
TOTAL	6,187.86	2.49	15,390	...	97,243

(4) *Repairs*.—In our written evidence, Volume II, page 7, column 1, we have shown that the consumption of stores applicable to Pulp for 1924-25 was Rs. 2,023 per month. This equals Rs. 24,276 per annum, and deducting this from the total figure of Rs. 96,950 shown in Form I, there is a balance of Rs. 72,674 applicable to Paper. Dividing this by 2,595.49 the cost per ton Pulp is Rs. 28.00.

For 1930-31 we have shown in Volume II, page 12, column 2, that the cost under this heading applicable to Paper was Rs. 1,52,823. Dividing this by 6,047.31 tons the cost per ton Pulp is Rs. 25.27.

(5) *Supervision*.—In Volume II, page 7, column 1, we have allocated Rs. 1,225 per month to Pulp Manufacture. This represents Rs. 14,700 for the year, and deducting this from the total figure of Rs. 59,088 shown in Form I, the balance applicable to Paper is Rs. 44,388. Dividing this by 2,595.49 tons the cost per ton Pulp is Rs. 17.10.

For 1930-31 we have shown in our reply to Question No. 48 (Volume I, page 41, column 2), that the cost applicable to Pulp is Rs. 723 per month. This is equal to Rs. 8,676 for the year, and deducting this from the total figure of Rs. 57,247 shown in Form I, there is a balance of Rs. 48,571 applicable to Paper. Dividing this by 6,047.31 tons the cost per ton Pulp is Rs. 8.03.

(6) *Miscellaneous*.—In Volume II, page 7, column 2, we have stated that Rs. 1,157 per month under this heading is applicable to Pulp. This is equal to Rs. 13,884 for the year, and deducting this from the total figure of Rs. 98,573 in Form I, the balance applicable to Paper is Rs. 84,689. Dividing this by 2,595.49 tons the cost per ton Pulp is Rs. 32.63.

For 1930-31 we have shown in Volume II, page 12, column 2, that Miscellaneous Costs applicable to Paper amount to Rs. 1,38,607. Dividing this by 6,047.31 tons the cost per ton Pulp is Rs. 22.92.

Summarising the above, the respective costs per ton of Bone-Dry Unbleached Pulp for the conversion of Pulp into Paper are as follows:—

	1924-25.	1930-31.	Reduction between 1924-25 and 1930-21.	
I. <i>Fibre Loss</i>		13.89	9.49	4.40
II. <i>Materials, Coal, etc.</i> —				
(1) <i>Materials</i>	48.67	29.93	18.74	
(2) <i>Labour</i>	34.01	27.71	6.30	
(3) <i>Coal</i>	29.80	10.44	19.36	
(4) <i>Repairs</i>	28.00	25.27	2.73	
(5) <i>Supervision</i>	17.10	8.03	9.07	
(6) <i>Miscellaneous</i>	32.63	22.92	9.71	
	— 190.21	— 124.30		
TOTAL	<u>204.10</u>	<u>133.79</u>	<u>70.31</u>	

We attribute the reductions shown above to the following causes:—

I. *Fibre Loss*.—This question has already been fully discussed, and we do not think any further explanation is necessary.

II. *Cost of Materials, Coal, Labour, etc.*—(1) *Materials*.—This is partly due to lower purchase prices, and partly to the smaller consumption of Bleach and Rosin.

As regards Bleach we attribute the decreased consumption to general improved practice resulting from increased experience of carrying out this process under tropical conditions. In addition we have been able, by

means of suggestions to manufacturers, to obtain a more satisfactory packing for our Bleaching Powder, and this has reduced deterioration during transit and while in stock at our Mill before use.

As regards Rosin we attribute the improvement to general improved practice and more economical working. A special factor which has assisted in this connection is that pulp prepared in our new beaters, is owing to their design, more easily sized, and the size consumption per ton of paper is therefore lower.

(2) *Labour*.—The improvement in this respect is chiefly due to the extension of the Paper Section of our Mill.

(3) *Coal*.—The reasons for this reduction have, we think, been fully explained elsewhere in our Evidence. Apart from the decline in coal prices the saving is partly due to the extension and consequently increased efficiency of our Power Plant, and partly to the extension of the Paper side of our Mill which has led to a smaller consumption of electric power per ton of paper.

(4) *Repairs*.—It is difficult to state any reason for the reduction in cost under this heading in view of the very large number of widely different materials, varying from machine felts, wires, etc., to new beater rolls which are included under this heading. It is, however, possible that the explanation is to be found in the higher output per machine which we are now obtaining, as it will be appreciated that increased production from a given unit would be unlikely to involve an increase in maintenance costs directly proportionate to the extra production.

(5) *Supervision*.—The decreased cost under this heading is chiefly due to the very great increase in production between the two years.

(6) *Miscellaneous*.—The decrease may be attributed almost entirely to the increase in production, and to the fact that miscellaneous expenditure has not increased in anything like direct proportion.

(9) *Letter dated the 7th August, 1931, from the India Paper Pulp Company, Limited.*

As requested in your letter No. 479-P. 47, dated the 4th instant, we enclose herewith a statement (with 5 spare copies) showing our Production since 1923-24 in the form desired by the Board.

Enclosure.

Statement of Annual Production from 1923-24 to 1930-31 inclusive.

	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
1. Printing	1,172	1,346	1,408	1,447	2,041	2,708	2,831	2,831
2. Writing Paper	565	958	809	833	1,830	2,590	2,604	2,902
3. Badami Paper	342	38	..	150	267	295	361	196
4. Wrapper	316	102	63	61	115	134	145	158
{ Blotting (White and Coloured)	31	63	80	57	38	58	60	67
5. { Card Board (White and Coloured).	8	29	17	38	67	47	53	42
{ Other Sorts	1	9	1	..	..	..	2	2
Total	2,435	2,545	2,378	2,586	4,358	5,892	6,056	6,188

(10) *Letter dated the 12th August, 1931, from the India Paper Pulp Company, Limited.*

As promised at our Oral Examination on the 1st instant, we have pleasure in submitting a note on the available supplies of Bamboo from Assam and the Chittagong Hill Tracts.

Enclosure.

NOTE ON THE AVAILABLE SUPPLY OF BAMBOO FROM ASSAM AND THE CHITTAGONG HILL TRACTS, AUGUST, 1931.

The portion of Assam to which this note refers includes only the Sylhet and Cachar Divisions, as we have never examined more distant areas owing to freight considerations. The Bamboo areas of Sylhet, Cachar, and the Chittagong Hill Tracts are essentially a single forest area whose approximate extent is indicated on the attached map by a dotted red line. It will be noted that the area also includes portions of Tippera, Manipur and the Lushai Hills and comprises several thousands of square miles.

Actually the available area is limited to the portions of the forest which are within reasonable distance of the rivers, which form the communications of the district, and afford the only possible method of transport for Bamboo.

Our Forest Manager has approximately 12 years' experience of these forests, as he was engaged in timber work in the area before he joined our Company. In the course of his experience he has ascended many of the principal rivers, and the following notes are based on his personal knowledge.

No attempt has been made to estimate the total quantity of Bamboo in this immense area, as the general reports our Forest Manager has made from time to time on the areas he has visited have enabled us to accept with complete confidence his statement that there would be no difficulty in obtaining the maximum requirements we have in view at present, namely 14,000—15,000 tons.

At the request of the Board, however, we now give below the following figures which have been specially prepared in consultation with our Forest Manager.

It is difficult to state a figure for the average annual yield per acre, owing to the great variation in density of growth which is noticeable even in mature forests. Our Forest Manager considers however that 100 stems per acre per annum is an absolutely safe estimate on a six-year cutting rotation. He also considers that a yield of 3 tons dry weight per thousand stems is a fair conversion basis. That is to say, the annual tonnage yield per acre on which he calculates is 0.3 tons per acre. In this connection it is interesting to note that Mr. Raitt, on page 87 of his recent work on the Digestion of Grass and Bamboo, states that annual production, making full allowance for rest periods, will vary with species and locality from 1 to 5½ tons per acre.

0.3 tons per acre equals 192 tons per square mile. If therefore extraction can be carried out for half-a-mile on each side of a river for a distance of 10 miles, the available tonnage is approximately 1,900 tons annually. It will be seen from the map that there are ten or twelve main rivers, with numerous tributaries, which penetrate the area. The majority of these run from 20 to 50 miles into the forests, and some of them for much greater distances before they become too small to permit of rafting bamboos. These figures indicate that a minimum quantity of 20,000 to 25,000 tons is easily available within 800 yards of navigable rivers. The quantity is undoubtedly much greater, and we may point out that it would be doubled if extraction were extended to a distance of 1 mile from the river banks. In practice this would not increase the cost by more than Re. 1 or Rs. 2 per ton at most.

In our opinion, however, the limiting factor is not the supply of accessible bamboo but the question of labour. In our written evidence, Volume 1,

page 17, column 1, we have stated that according to our Forest Manager's experience 9 tons of bamboo requires a labour force of 10 men for one month. On this basis a labour force of 370 men for a continuous period of 6 months would be necessary to extract 2,000 tons from one river. (In this connection we may mention that the maximum tonnage required from any one river to produce an aggregate of 25,000 tons is 2,500 tons and the average is about 1,700 tons.)

Actually the local labour is not accustomed to continuous forest working, and if our Manager is correct in estimating that approximately double the number of casual workers would be employed, the total number required on a river for extracting 2,000 tons in a six months' season would be 740. At the same time it must be remembered that our extraction is at present on a much smaller scale, and we believe that increased development would encourage more continuous working, while it would be quite practicable in most districts to extend the extraction season. We believe, therefore, that if a labour force of, say, 500 men could be obtained it would be possible to obtain 2,000 tons per annum from practically any of the rivers in the area. Our Forest Manager informs us that he does not anticipate there would be any difficulty in securing labour to this extent in most of the areas concerned, and we may mention that during the past season we actually obtained 1,400 tons from Area "A" and 1,300 tons from a small section of Area "D".

At our request the following statement has been prepared by our Forest Manager to show how he would recommend the distribution of a theoretical requirement of 25,000 tons, and he informs us that his figures may be regarded as conservative estimates. (The letters refer to the areas as marked on the attached map.)

Area.	Quantity.
	Tons.
"A"	2,000
"B"	1,500
"C"	2,000
"D"	3,000
"E"	2,500
"F"	1,500
"G"	1,000
"J"	2,000
"K"	1,500
"L"	3,000
"M"	1,500
"O"	750
"P"	1,000
"R"	1,750
	<hr/> 25,000

In connection with the above we think the following brief description of one of the smaller rivers will be of interest to the Board. (The Area referred to is marked "R" on the Map.)

The first Bamboo area is entered about 15 to 20 miles from the railway, and the river then runs for several miles through Bamboo forest. There is then a stretch of cultivated land before the river enters the main forests into which it penetrates for 30 to 40 miles before it becomes small enough to make rafting difficult. In addition it will be noticed that the main river has one large and numerous smaller tributaries, which are navigable for

varying distances. No estimates that in this drainage there is between 75 and 100 miles of navigable river running through Bamboo forest.

With regard to labour there is a dense population in the neighbourhood of the railway station, whose livelihood depends on boating, forest work and the local crops. We have never had occasion to take more than 500 tons from this particular area, but our Forest Manager believes that a capable contractor would have no difficulty in securing up to 1,000 men if necessary. This would be sufficient for the extraction of approximately 4,000 tons, but it will be noted that only 1,750 tons has been allocated to the area in our Manager's general statement.

In conclusion we should explain that the Company's policy for the past six years has been to place relatively small contracts in a number of areas so as to establish a connection which would permit of rapid expansion when necessary. In this connection it must be remembered that the Company works through local contractors who have had no previous experience of dealing in bamboos by weight. As a result they have been unwilling to accept contracts of any size until they had first satisfied themselves regarding the yield per thousand and the deduction for moisture.

Apart from this question of policy our entire requirements to-date could easily have been supplied by two or three areas only.

(11) *Letter No. 496, dated the 10th August, 1931, from the Tariff Board to the India Paper Pulp Company, Limited, Calcutta.*

I have the honour to request you to be good enough to state what exactly is the capacity in terms of raw bamboo of the crusher now used by you. It would also be of value if you would at least estimate the capacity of the new crusher with which you have been experimenting.

(12) *Letter dated the 13th August, 1931, from the India Paper Pulp Company, Limited.*

We have received your letter No. 496, dated the 10th instant, and have pleasure in submitting the information desired therein.

The capacity of our existing large crusher is approximately 24 tons of raw bamboo per day.

It is estimated that the capacity of the new crushers (or Fibre Separating Machines) with which we have been experimenting, will be about 6 tons of raw bamboo per day each when the experimental work now in hand is completed. This figure is, however, an approximate estimate and is liable to be affected by any modifications in the machines which may result from our experiments.

(13) *Letter dated the 13th August, 1931, from the India Paper Pulp Company, Limited.*

As requested by telephone on the 12th instant, we have pleasure in submitting particulars of our average Works Cost, and our average nett selling price, during the 5 years 1926-27 to 1930-31 inclusive.

(1) From Form I of our written evidence it will be seen that our total production during the 5 years was 25,080.23 tons, and that the total Works Cost (including freight) was Rs. 91,55,814. The total Works Costs excluding freight was Rs. 88,00,153. These figures represent an average Works Cost of Rs. 365.06 per ton if freight is included and of Rs. 350.88 per ton if freight is excluded.

(2) Our written evidence does not show the tonnage sold nor the total proceeds realised during the period. We actually sold, however, a total of 24,084.54 tons, and the nett proceeds amounted to Rs. 1,20,14,214. Both

these figures include wrapper consumed for our own use, and the proceeds realised are after deducting all commissions, allowances, etc., but before deducting Freight. The resulting average net price per lb., which is As. 3-6-76, is, therefore, directly comparable with the figures shown in column 3 of Table "E" of our written evidence. The nett proceeds after deducting freight amounted to Rs. 1,16,58,553 which represents an average nett *ex-Mill* return of As. 3-5-49. This figure is, therefore, directly comparable with the last column of figures in Table "E" of our written evidence.

As explained by telephone, however, we feel that in the case of our Mill the above figures may be misleading, as the Paper Section of our Mill was doubled during the period. The average Works Cost as given above, therefore, represents the average between a single machine Mill for part of the period and a two machine Mill during the remainder of the period. Similarly the sales figures are affected by the fact that during the years 1926-27 and 1927-28, when prices were higher, the tonnage sold was lower than in the years 1928-29 to 1930-31, when prices were lower.

We accordingly feel that average figures for the three years 1928-29 to 1930-31 inclusive might be of more value to the Board, as our Mill was working two Paper Machines throughout this period.

We accordingly give below the average figures for these three years.

From Form I, it will be seen that our Production was 18,135.72 tons and that the Works Costs were Rs. 63,20,144 including freight and Rs. 60,64,690 excluding freight. These figures represent Rs. 348.49 and Rs. 334.41 per ton respectively.

During the three years our total sales (including wrapper consumed) were 17,376.19 tons and the total nett proceeds were Rs. 85,77,722 before deducting freight, and Rs. 83,22,268 after deducting freight. These figures correspond to an average nett return of As. 3-6-31 per lb. delivered, and As. 3-5-05 per lb. *ex-Mill* respectively, these figures being directly comparable with the figures in columns 3 and 7 of Table "E" of our written evidence.

In connection with the average prices realised by us during recent years we may mention that on July, 15th, we found it necessary, in concert with the Titaghur Paper Mills Company, Limited, and the Bengal Paper Mill Company, Limited, to reduce our prices throughout practically the whole of India by 2 pies per lb., or Rs. 23 per ton. This reduction was necessitated by the fall in the price of imported papers which has taken place during recent months, and which, if it continues, may oblige Indian Mills to reduce prices still further.

We trust that the above figures and explanations are clear and that they provide all the information which is required by the Board.

INDIA PAPER PULP COMPANY, LIMITED

B.—ORAL.

Evidence of Messrs. J. H. S. RICHARDSON, J. A. J. MCKENZIE and A. L. CAMERON, recorded-at-Calcutta on Saturday, the 1st August, 1931.

President.—Mr. Richardson, you represent the India Paper Pulp Company?

Mr. Richardson.—Yes.

President.—What is your position in the Company?

Mr. Richardson.—I am a Managing Director in Messrs. Andrew Yule and Company, Limited.

President.—Mr. Cameron?

Mr. Cameron.—I am in charge of the paper department of Messrs. Andrew Yule and Co., Ltd.

President.—And Mr. McKenzie?

Mr. McKenzie.—I manage the mill.

President.—The India Paper Pulp Company is still a private registered Company?

Mr. Richardson.—Yes.

President.—There has been no change in that respect since 1925?

Mr. Richardson.—None at all.

President.—I take it your position is that since the company was started it has not been able to declare any dividend and you have not considered the question of issuing an appeal for public subscription.

Mr. Richardson.—We don't feel that we would be justified in calling for public subscription in the present position of the Company, but it has always been our intention—I mean the intention of our firm—to make it into a public company.

President.—The particular process which you employed in your Company at the time the Tariff Board was conducting its last enquiry was a patented process?

Mr. Richardson.—Yes.

President.—Is it still a patent process?

Mr. Richardson.—I can say that the original patent for making Bamboo Pulp and paper by our process has now expired and it is free for anybody to use.

President.—How long ago did it expire?

Mr. Richardson.—I haven't got the exact date.

President.—So that at present it is not a patent process?

Mr. Richardson.—No.

President.—I understand from your reply to Question 2 that at present the total capacity of the pulp section of your mill is 200 tons a month or 2,400 tons a year.

Mr. Richardson.—Yes.

President.—You have not so far worked the pulp section up to its maximum capacity?

Mr. Richardson.—No.

President.—Very nearly?

Mr. Richardson.—Yes. I may say as a matter of interest that the average pulp output for April, May and June this year was 198.5 tons which is very nearly the maximum capacity of the plant.

President.—The total capacity of your mill you give us as 6,000 tons a year.

Mr. Richardson.—The actual paper production is over 6,000 tons.

President.—It is very nearly 6,200 tons.

Mr. Richardson.—Yes.

President.—Normally we might take 6,000 tons as the capacity of the paper mill?

Mr. Richardson.—Yes.

President.—6,000 tons of paper would correspond to how many tons of pulp? By the way this 2,400 tons which you give us as the capacity of your pulp section, is that dry pulp?

Mr. Richardson.—Dry pulp.

President.—To that you add about 240. About 2,650 would be the capacity in terms of air dry pulp?

Mr. McKenzie.—Yes.

President.—What is the air dry pulp equivalent of 6,000 tons of paper? I suggest that 100/86 of that would give you the air dry pulp equivalent.

Mr. McKenzie.—Yes, approximately 7,000 tons exclusive of loading.

President.—The pulp equivalent would be higher than the paper equivalent.

Mr. Richardson.—Yes.

President.—So that the amount of pulp that you would require for working the paper section of your mill to its maximum capacity would be 7,000 tons.

Mr. Richardson.—Yes.

President.—You are able to make on your present plant 2,650 tons of air dry pulp.

Mr. Richardson.—Yes.

President.—Therefore as the plant is equipped at present you would need to use over 4,000 tons of imported pulp.

Mr. Richardson.—That is right.

President.—That is the position at present?

Mr. Richardson.—Yes.

President.—Actually the largest quantity of imported pulp that you have used so far on the mill is something less than that.

Mr. McKenzie.—4,500 tons in 1930-31.

President.—That is almost exactly the difference between 7,000 and 2,600.

Mr. Richardson.—Yes.

President.—I gather from your statement of the various classes of paper which have been produced in your mills during the last 6 years a little over two-thirds of your output is white printing and white writing.

Mr. Richardson.—A little more than two-thirds.

President.—Somewhere about 70 per cent. represents white printing and white writing.

Mr. Cameron.—87 per cent.

President.—In that case are you including superior badami?

Mr. Cameron.—Superior badami is only 1·67 per cent.

President.—If you take cream laid, cream wove, azure laid and white printing, that roughly is a little over 75 per cent.

Mr. Richardson.—Yes.

President.—Your badami papers constitute about 10 per cent.

Mr. Richardson.—Actually on page 2, Summary, we have taken the writing and printing papers as 94·99 per cent.

President.—And the badami papers come to about how much?

Mr. Richardson.—4½ per cent.

President.—The point that I am trying to get at is this: to what extent in actual practice have you been faced by the competition of cheap mechanical wood papers imported into the country. Before you answer the question there is one point which I would like you to be clear about. Am I right in thinking that it is mainly in respect of common badami papers that this competition arises.

Mr. Richardson.—I would like to say that so far as we are concerned, this question does not affect us so much as the other mills. I believe you are right in suggesting that the cheap mechanical papers compete with badami and seeing that our percentage of badami is so low, it follows, that we are not affected very much by these cheap importations.

President.—Would you care to express any opinion as to which particular classes of paper, as far as you are concerned, are exposed to the competition of imported mechanical paper? You make superior badami to a small extent; you make common badami to a small extent and you also make a small amount of unbleached badami.

Mr. McKenzie.—Unbleached printing is almost entirely for Government.

President.—Your superior badami goes on the market?

Mr. McKenzie.—Yes.

President.—Your common badami goes on the market and sells in competition with mechanical wood paper?

Mr. Richardson.—Actually it is so small that I don't think that we would care to express any definite opinion.

President.—Your unbleached Printing, you say, goes almost entirely to Government?

Mr. McKenzie.—That is right.

President.—What kind of price do Government pay you?

Mr. Richardson.—It is given in our letter to Government of July last year, a copy of which was sent to the Tariff Board.

Mr. McKenzie.—In this connection I may say that the so-called unbleached paper supplied to Government is semi-bleached.

President.—When you say semi-bleached, what precisely is the proportion of bleach in it as compared with white paper or with fully bleached paper?

Mr. McKenzie.—Approximately one-third.

President.—So that if it is 100 in fully bleached paper, it is about 33 in what is called the unbleached paper?

Mr. McKenzie.—Yes.

President.—Have you got the price figures, Mr. Richardson?

Mr. Richardson.—In 1930 I find that Government paid 3 annas 5 pies for unbleached printing as against 3 annas 6 pies for white printing.

President.—Obviously then in calculating that price Government must have taken into account not the revenue duty but the protective duty.

Mr. Richardson.—Obviously.

President.—As far as your sales of unbleached printing to Government are concerned, you have not in the least suffered on account of the competition from mechanical wood papers?

Mr. Richardson.—No.

President.—Now I will get on to your reply to Question 6. In the first place in giving this yield of pulp, are you taking bleached or unbleached?

Mr. Richardson.—Unbleached.

President.—It is unbleached dry pulp?

Mr. Richardson.—Yes.

President.—You take that at 44 per cent.?

Mr. McKenzie.—It is bone dry pulp.

President.—So that the corresponding air dry pulp would be 49 per cent.

Mr. McKenzie.—Yes.

President.—I gather from Mr. Raitt's analysis of the chief classes of bamboo that the total cellulose content taken on air dry basis is 48 per cent. Now it looks to me that if that figure is right, you get a little more out of the bamboo than it contains. Mr. Raitt's analysis may be quite open to question and it may be that the kinds of bamboo on which Mr. Raitt made his experiments and worked out his figures are different from the particular classes of bamboo with which you have been dealing. It struck me when I saw the figure of 49 per cent. that it was probably on the high side. The particular point that I want to clear up is how far is this figure of 49 per cent. an actual figure?

Mr. McKenzie.—It is impossible to give any actual figure for bamboo pulp, as we have no possible means of measuring it as such. What we have done is to take the yields of the other raw materials on a fairly high basis so that we don't give bamboo any unfair advantage.

President.—Can you tell me briefly how exactly these yields are estimated? You get first your output of finished paper which is a definite quantity about which there is no mistake.

Mr. McKenzie.—There is no mistake about that.

President.—From that you try to work back to your pulp yield?

Mr. McKenzie.—Yes.

President.—And on the way you have got to discover the amount of auxiliary materials that would go into the finished paper?

Mr. McKenzie.—Yes.

President.—You use a certain amount of paper cuttings for which you have a definite figure?

Mr. McKenzie.—Yes.

President.—That is based on actual experience?

Mr. McKenzie.—It is based on actual experience and comparatively it is on the high side.

President.—Then you take China clay. At what rate do you take that?

Mr. McKenzie.—We take it at 75 per cent. But China clay is sold on the basis of 12 per cent. moisture. In taking it at 75 per cent., we are showing a yield of nearly 90 per cent. on the dry clay loaded into the beater.

President.—What other materials do you use? Rosin for instance.

Mr. McKenzie.—Rosin is so small in a calculation of this kind.

President.—What do you mean by "so small"?

Mr. McKenzie.—It is not likely to be more than 1½ per cent. of the total.

President.—You deduct these figures from your paper yield which is actually measured.

Mr. McKenzie.—Then we have wood pulp which is taken at 86 per cent. It is a very high figure.

President.—I have not seen any figure lower than 85 per cent. Why do you say that 86 per cent. is a high figure?

Mr. McKenzie.—It is on the high side.

President.—Making these calculations on that basis, you get a figure of 49 per cent.?

Mr. McKenzie.—Yes.

President.—What is the class of bamboo that you use?

Mr. Richardson.—Mostly Assam hill type bamboo.

President.—What is the botanical name for that?

Mr. Richardson.—It is *Melocanna*.

President.—Practically the whole of your supply is that.

Mr. Richardson.—Yes.

President.—You have never tried *Dendrocalamus strictus*?

Mr. McKenzie.—We have tried it.

Mr. Richardson.—Not in large quantities.

President.—So that your position is that as you work in your mill the *Melocanna* type of bamboo would give 49 per cent. air dry pulp?

Mr. McKenzie.—Yes.

President.—The loss that occurs in the process of converting unbleached dry pulp into paper is $\frac{2}{44}$ as you calculate it?

Mr. McKenzie.—Yes.

President.—That is to say 44 units of unbleached dry pulp would give 42 units of bleached paper.

Mr. McKenzie.—Yes.

President.—That loss of 2 units which is a loss in conversion is partly mechanical loss in the process due to handling?

Mr. McKenzie.—Yes.

President.—There is also a certain amount of loss in bleaching?

Mr. McKenzie.—That is true.

President.—Is it possible for you to estimate approximately the loss that may be put down to bleaching?

Mr. McKenzie.—Approximately 3 per cent.; that is on bamboo. The total conversion loss is about 5 per cent.

President.—If your yield is in the proportion of 42 to 44, it would give you $4\frac{1}{2}$ per cent.

Mr. McKenzie.—Yes. The mechanical loss in conversion is generally taken at about $1\frac{1}{2}$ per cent. $1\frac{1}{2}$ per cent. to 2 per cent. is the normal range so far as mechanical loss is concerned. $2\frac{1}{4}$ per cent. to 3 per cent. is the loss that occurs in bleaching. With an easy bleaching pulp it may be slightly lower and with a strong bleachable pulp it may be slightly higher.

President.—Would $2\frac{1}{4}$ per cent. be considered a reasonable figure taking the normal wastage in the bleaching process?

Mr. McKenzie.—The normal wastage is about $2\frac{1}{2}$ per cent.

President.—The best way in which we can understand it is this. You take it as $4\frac{1}{2}$ per cent. on the unbleached pulp?

Mr. McKenzie.—Yes.

President.—That is the total loss?

Mr. McKenzie.—Yes.

President.—And $2\frac{1}{2}$ per cent. on the unbleached pulp is the loss that is due to bleaching.

Mr. McKenzie.— $2\frac{1}{2}$ to 3 per cent.

President.—Would $2\frac{1}{2}$ to 3 per cent. be a reasonable figure?

Mr. McKenzie.—Yes.

President.—Taking the normal practice, you consider that a reasonable figure?

Mr. McKenzie.—Yes, taking the normal wood pulp practice that is a reasonable figure.

President.—Suppose instead of unbleached pulp made from bamboo you had unbleached imported pulp. Would it make any difference to the amount of loss that you would incur in the conversion process?

Mr. McKenzie.—No, it would be identical.

President.—That is to say when wood pulp goes through the process of conversion from unbleached pulp to bleached paper, there is really no difference as regards the wastage between that and bamboo pulp?

Mr. McKenzie.—That is so.

President.—Is there any other respect in which the costs on unbleached wood pulp might differ from corresponding costs in bamboo pulp? What has been your experience? You have been dealing with both classes of pulp.

Mr. McKenzie.—There is practically no difference. We regard the use of wood pulp and bamboo pulp as interchangeable. The question of which is used depends on the quantity of bamboo pulp we are able to produce. There is practically no difference in our conversion cost or in the method of working which ever pulp we use.

President.—Suppose I put the problem to you in this way. You take the easy bleaching pulp that is imported. If you use that in place of a corresponding quantity of bamboo pulp for the manufacture of paper, it is not going to make any difference to you in the matter of costs.

Mr. McKenzie.—The only difference will be that we will have to break up the wood pulp. We receive the bamboo pulp in a wet state and the wood pulp in a dry state.

President.—That is very negligible.

Mr. McKenzie.—Quite. The difference would be represented by the cost of throwing the wood pulp in the breaker and breaking it.

President.—Will you please look at Statement G. There it is shown that the total expenditure that you incurred in 1930-31 on imported pulp is Rs. 8.45 lakhs. Now if instead of 4,535.9 tons of imported wood pulp I used 4,535.9 tons of bamboo pulp and if I made the necessary adjustment for the additional cost of bamboo pulp there would be no other adjustment required?

Mr. McKenzie.—There is nothing that I know of that would alter the cost.

President.—Supposing for example we took approximately a figure of Rs. 200 as the cost of your air dry bamboo pulp just for argument's sake and the cost of your easy bleaching, sulphite pulp per ton landed at your mill at Rs. 186, the difference would be Rs. 14. If I increased the cost to the extent of Rs. 14 per ton there is no other addition that would be required.

Mr. McKenzie.—I take it that your argument is this. The auxiliary materials, sizing and other things would remain the same.

President.—Yes, the wages cost, the conversion cost, etc., would remain the same.

Mr. McKenzie.—Then the conversion cost from pulp to paper would remain the same.

President.—On page 3 you make the following statement:—"As regards the suitability of bamboo as a raw material for the manufacture of paper we have now been using bamboo on a commercial scale for about 9 years and our experience is that this material is entirely suitable for the manufacture of practically all the varieties of paper in common use in India with the possible exception of mechanical and Kraft papers regarding which we have no experience". You admit, don't you, that there is a certain amount of difference in quality between paper which is made in the main of grass and paper made, in the main, of bamboo?

Mr. Richardson.—We admit that.

President.—As I understand it, the difference is that paper made, in the main, from grass is stronger and slightly harder.

Mr. Richardson.—It is also bulkier.

President.—And paper made from bamboo is softer and less bulky.

Mr. Richardson.—Yes.

President.—And rather weaker?

Mr. Richardson.—Yes, it is weaker.

President.—Taking the present market for paper of all kinds, in India, would it be possible for paper made in the main from bamboo to capture

practically all the market that there is in this country over and above the market now held by paper made in the main from grass? I understand that the paper which is made in No. 1 mill at Titaghur is made very largely of grass and I gather that there is a specific market for that kind of paper. If, as you say, bamboo paper differs in these qualities from paper made in the main from grass, I take it that that portion of the market at any rate will be difficult for you to capture.

Mr. Richardson.—In view of the many years experience of the market that we have got I don't think that there should be any difficulty about bamboo paper.

President.—That makes the statement a bit difficult to follow. As I understand your point of view, there are two reasons why bamboo paper is not able at this stage to make any headway in the market. One reason is that there are certain essential differences in quality—softness of texture, bulkiness, lack of strength and so on—and all these constitute essential differences in quality between paper made from bamboo and grass paper. The other reason is that bamboo paper is new to the market, the market has got to get used to this new class of paper, that is paper made from a new kind of material, and therefore there is a certain amount of prejudice in the market which bamboo paper has got to surmount.

Mr. Richardson.—That is assuming that we are not able to improve the quality. We don't admit that. We are confident that in the end we shall be able to eliminate all these various weaknesses in our paper. We are still experimenting and we are sure that we shall be able to improve the quality of the paper.

President.—As far as you can speak with reasonable certainty from the results of your experiments during the past five or six years, do you think it is likely that these essential differences in quality could be removed by suitable adjustments in the manufacturing process?

Mr. Richardson.—We certainly think that is possible.

President.—Take first, for example, the question of softness. Bamboo paper is softer than grass paper. Suppose it were necessary for you to put bamboo paper on the market which had the same degree of hardness as grass paper, what is the precise kind of adjustment which would be required?

Mr. Richardson.—Adjustment in the mechanical treatment of pulp. We have just got this new beater with a special kind of roll with the idea of improving the strength of paper. During the period that these experiments are carried out we will have to go on with the weak paper as it is but in the future we hope that this will be overcome.

President.—What makes the difference in the beater? Is it the particular way in which the beater is designed or is it the extent of time that you allow the pulp to remain in the beater?

Mr. McKenzie.—The design of the beater is one factor but there are many others which have an important influence. The weight of the roll and the width and spacing of the bars in the roll, the width and spacing of the bars in the plate, the pressure applied by the roll, consistency of pulp in the beater, all these and many other factors have a bearing.

President.—Let me try to put the question from a different point of view. Reading through the evidence in the last enquiry and the Report of our predecessors, I gather that what bamboo, if it is proved successful, is going to contribute to the paper industry is the kind of qualities which are generally associated with wood pulp. Is that correct?

Mr. McKenzie.—It is to a certain extent and also to a certain extent that associated with esparto grass.

President.—That is to say, you don't admit that in India, if bamboo proves successful, ultimately we shall have between grass paper and bamboo paper the sort of distinction that exists in European countries between wood paper and esparto paper? There is a distinction between these two which

is fairly well recognized and that kind of distinction may ultimately arise in India between grass paper and bamboo paper. Is that correct?

Mr. McKenzie.—Yes.

President.—If that is so, there is a certain well defined market for grass paper which bamboo paper however well you might develop it would not be able to capture.

Mr. Richardson.—May we say this, that we think that bamboo paper will meet the needs of people who use grass paper. It can be left to them to choose. You have very many different opinions amongst buyers: one may probably say that he prefers bamboo paper and another may prefer grass paper.....

President.—The real difficulty there is that if we can have a definite opinion from the market regarding the relative quality of bamboo paper as such, that would have been very valuable evidence for us, but so far the furnish of the kind of paper which has been placed on the market is based on such a relatively small percentage of bamboo pulp that any definite opinion is hardly available, that is to say that the opinion the market may have formed may be wide of the mark.

Mr. Richardson.—It is almost impossible to assess the percentage.

President.—I wonder if you could help me. We have got to look at this question almost entirely from the technical point of view, that is to say to the extent that the market in India has not had a chance of really testing paper made in the main from bamboo, we have so to speak no empirical test for bamboo paper and therefore we have got to look at it from the technical side.

Mr. Richardson.—So far as our mills are concerned we are making bamboo paper and putting it on the market.....

President.—You can't put a few tons on the market and expect the market to form an opinion. Unless bamboo paper is made in bulk and put in sufficient quantities on the market, the market cannot really form any opinion on it. You can make 100 per cent. bamboo paper which might stand the test, but that again is no real sort of opinion on which we can base any practical solutions. I suggest that in this country there is a well defined market for paper of the kind which can be made only from grass and you think that apart from that, practically the whole of the market may be captured by bamboo paper; in other words all that part of the market which is now catered for by wood paper is a market which can be captured by bamboo paper. Is that the proposition?

Mr. Richardson.—Yes, and we think bamboo paper would be found to be suitable for that section of the market which now uses grass paper.

President.—We now come to question 8. The most marked improvement which has taken place in regard to the bamboo side of your works is the great reduction in the cost of bamboo.

Mr. Richardson.—That is true.

President.—Whereas in 1924 you paid Rs. 53-8 for a ton of bamboo delivered at the mills, in 1930-31 you would probably reach a figure lower than Rs. 43.

Mr. Richardson.—In 1929-30 it was Rs. 43-13 and this year the approximate estimate is between Rs. 41 and 42.

President.—That is for the season which has just ended?

Mr. Richardson.—Yes.

President.—Your season for extraction of bamboo is December to June?

Mr. Richardson.—October to June.

President.—So that your cost of bamboo up to June 1931 works out to somewhere between Rs. 41 and 42?

Mr. Richardson.—Yes, per ton of bone dry bamboo delivered at the mill.

President.—How precisely would you account for this big reduction in price?

Mr. Richardson.—At the time of the last enquiry we were getting bamboo from our Kasalong Reserve which proved to be very expensive. There were vested interests which were difficult to get over and eventually we went to the Assam area. There you have forests with the railway line running through and bamboo is very much cheaper.

President.—You don't work any areas departmentally, do you?

Mr. Richardson.—We found that far too expensive for our requirements.

President.—The only area that you worked departmentally was the Kasalong area and the position as regards that area is that the lease has been suspended?

Mr. Richardson.—Yes, but we still have the option of renewing the lease.

President.—I take it that up to 1941 under your agreement with the Bengal Government the lease is in abeyance but on six months notice it is open to you resume it?

Mr. Richardson.—Yes; in the meantime we guarantee the minimum royalty to Government.

President.—That is to say Government may issue permits to other firms to enter your reserve and extract bamboo?

Mr. Richardson.—That was the whole idea. In fact people did not like the presence of this company in these reserves and we withdrew, but we actually purchased bamboo from that area through contractors.

President.—And if Government are not able to get out of these parties the whole of the royalty then you have got to make up the deficiency?

Mr. Richardson.—Actually that has never happened.

President.—Has there been any suggestion made to you regarding the possibility of your co-operating in the organization of a pulp mill in Cuttack?

Mr. Richardson.—None whatever.

President.—Coming now to question 9, statement A, on the basis of your later figures—figures for December to June this year—we may take about Rs. 41-8 instead of Rs. 43-13 as the cost of bamboo?

Mr. Cameron.—The figures are not complete yet because we have not closed the accounts for the season. The estimate for the season was Rs. 42-8. The only factor which would materially alter this estimate is the overhead, which is affected by the quantity.

President.—Will you tell us precisely what does this overhead mean?

Mr. Cameron.—We maintain a Forest Manager who makes contracts, and tours the areas to see that the forests are properly conserved.

President.—If there is a larger quantity of bamboo purchased by you this year, to the extent that there is no corresponding increase in the forest managers salary and establishment charges, to that extent the overhead per ton is reduced?

Mr. Cameron.—That is correct. That is the sole source of economy.

President.—Can I take a figure of, say, Rs. 2 less than Rs. 43-13?

Mr. Cameron.—I think Rs. 42 will be quite safe. I believe that the final figure will be below Rs. 42, but how much I cannot say.

President.—The figures that you give in reply to question 9 for the forest areas at Chittagong, these figures exclude the forest manager's salary?

Mr. Cameron.—Yes.

President.—In 1924-25 when the Tariff Board looked into this matter they found that you were getting bamboo at the mill at a price of Rs. 54 to 55 and they considered that it should be possible for you to get your bamboo at a price somewhere between Rs. 40 and 45. The extraction they had assumed was much larger than the extraction that you are getting now.

Mr. Richardson.—It was more than double.

President.—The position therefore is that with practically the same extraction or just a little more than in 1924-25 you have been able to bring down

the cost of bamboo to the level which the Tariff Board estimated as your future costs.

Mr. Richardson.—That is correct.

President.—It is possible that the costs might go down still further.

Mr. Richardson.—We are experimenting with different kinds of bamboo.

President.—It depends on the classes of bamboo?

Mr. Cameron.—It also depends on where it comes from.

Mr. Richardson.—The manner in which we have brought down the cost shows that.

President.—If you are able to exploit nearer areas than Assam?

Mr. Richardson.—Yes.

President.—On condition that the bamboo obtained from these areas is suitable, then of course to the extent you are able to use your bamboo from a nearer area, your works cost will go down.

Mr. Richardson.—Yes.

President.—So far as you have had experience of bamboo grown in these new areas, do you think that it is possible without any further increase in extraction to get your cost down?

Mr. Cameron.—If the new areas can be used we have little doubt that the cost of extraction apart from the cost of freight will be reduced.

President.—Your present area is Assam?

Mr. Cameron.—Yes.

President.—What is the new area that you are thinking of?

Mr. Cameron.—There are various districts. They are situated in Bihar and Orissa.

President.—It would reduce the distance by how much?

Mr. Cameron.—It is partly a matter of distance and partly the nature of the transport from the two areas. In Bihar and Orissa, the bamboo comes to Naihati direct on the broad gauge railway. From Assam it comes on the narrow gauge railway as far as Santahar and is transhipped there. The transshipment is expensive. Moreover it necessitates the bamboo being cut at the station and despatched in the form of bundles. That is a fairly expensive process. In Bihar and Orissa, or at any rate in certain parts of Bihar and Orissa, it is not necessary.

President.—What is the impression that you have formed so far with regard to the suitability of bamboo from Orissa?

Mr. Richardson.—We are still experimenting.

President.—You are not in a position to express any definite opinion?

Mr. Richardson.—We have only recently had this latest experimental machine and it has not yet been possible to test the quality. From what we know as a result of these experiments however we believe that it is possible to use this bamboo.

President.—You would not care to commit yourself to any figure indicating the extent to which in the immediate future you might reduce the cost of bamboo from say Rs. 42?

Mr. Richardson.—Not without taking the new areas into consideration. The answer is we can't commit ourselves definitely.

President.—May I ask one question with regard to the causes which have brought about a considerable fall in the price of bamboo? Has the fact that you are importing considerable quantities of imported pulp got anything to do by way of reducing the price at which the contractor is prepared to sell his bamboo.

Mr. Richardson.—So far as we are concerned the wood pulp price has no bearing on the price of bamboo.

President.—Without having any inside knowledge whatsoever it struck me that wherever you get your raw material through contractors not working

departmentally yourself and you have the possibility of using some alternative raw material, it is possible for you to use that alternative material as a handle for making a bargain satisfactory from your point of view.

Mr. Richardson.—That might be so, if there were many more people than ourselves.

President.—Till about a year ago you have been the sole users of bamboo and an increase in the supply of bamboo available places you in a position of advantage.

Mr. Richardson.—Yes.

President.—You are the sole consumer.

Mr. Richardson.—That is true.

President.—And when the sole consumer has in addition the advantage of resorting to alternative raw material, his position is extraordinarily strong.

Mr. Richardson.—As I say it might be so if there were many more people in the field than ourselves.

President.—As a matter of actual experience it is really the excess of supplies that has brought about the reduction in price?

Mr. Richardson.—Yes.

Mr. Rahimtoola.—I find your answer to question 1 is not at all satisfactory. You know the question asked by the Indian Tariff Board and the reply you gave in 1924. I shall just read it out and tell you why I consider it most unsatisfactory. The reply is "The India Paper Pulp Company, Limited was registered and incorporated as a private Company on 4th April 1918. Being a private Company we are not at liberty to disclose details of the holdings. We may state however that the capital is entirely rupee and that the intention has always been to make the Company a public one inviting participation from Indian shareholders and Directors, this having been the policy of the Managing firm for half a century." Do I understand that your reply means that another half a century will be required to consider this aspect of the question?

Mr. Richardson.—Certainly not. "Half a century" refers to the time we (our firm) have been Managing Agents in India.

Mr. Rahimtoola.—That means you have been contemplating for half a century?

Mr. Richardson.—This Company has only been in existence for 10 years and it means that we have the experience of half a century behind us.

Mr. Rahimtoola.—When is that policy to come into effect?

Mr. Richardson.—As soon as we are in a position to float it into a public concern.

Mr. Rahimtoola.—You can't give me any definite idea on the subject?

Mr. Richardson.—No. We will float the Company as soon as we consider that it is in a satisfactory financial position.

Mr. Rahimtoola.—You are not in a position to give me the date at present?

Mr. Richardson.—No.

Mr. Rahimtoola.—May I draw your attention to the Fiscal Commission's Report which says:

"If the imposition of conditions is justifiable in the one case, it is equally justifiable in the other. Our conclusion therefore is that every Company desiring to establish an industry after the policy of protection has been adopted in India should be subject to the same conditions which are recommended by our colleagues, viz., that all such companies should be incorporated and registered in India with rupee capital, that there should be a reasonable proportion of Indian Directors on the Board and that reasonable facilities should be given for the training of Indian apprentices."

You are aware that this has been accepted even by the Legislative Assembly.

Mr. Richardson.—Yes.

Mr. Rahimtoola.—Before an industry comes and demands protection it must satisfy these conditions and I take it that in spite of protection having been in existence for seven years, your Board is still considering the possibility of having a registered public company with Indian Directors.

Mr. Richardson.—I don't think the examination of the financial question has been taken into consideration. It will not be possible to float this Company on the market.

Mr. Rahimtoola.—I don't think the question of financial position comes in at all. Only an opportunity should be given to Indians to subscribe.

Mr. Richardson.—We are quite willing to do it as soon as we consider that the position is suitable.

Mr. Rahimtoola.—The position must be made suitable if you want to apply for protection.

Mr. Richardson.—The financial position is such that we cannot make it suitable.

Mr. Rahimtoola.—You have not done so in spite of protection.

Mr. Richardson.—We are doing so as far as possible.

Mr. Rahimtoola.—May I know about the Indianisation of the superior management of the Company?

Mr. Richardson.—We said previously two Indians were connected with the superior management.

Mr. Rahimtoola.—May I know what is the position now in your office?

Mr. Richardson.—That is the same to-day.

Mr. Rahimtoola.—How exactly is it?

Mr. Richardson.—One of our Managing Directors is an Indian. We are merely Secretaries of the Company.

Mr. Rahimtoola.—I am talking now of the staff in the superior management. You say there are two Indians. What are their salaries?

Mr. Richardson.—I am afraid I can't say that.

Mr. Rahimtoola.—What about the other man?

Mr. Richardson.—The other one is a chemist in the mill.

Mr. Rahimtoola.—I want to know the total number of people who are considered to be on the superior staff.

Mr. Richardson.—Are you referring to the mill or to the Head Office?

Mr. Rahimtoola.—I am referring to both. You can give me figures separately if you like.

Mr. Richardson.—That is a difficult question to answer. So far as the mill is concerned, we can say it is 5. So far as the Head Office is concerned it may be many more.

Mr. Rahimtoola.—Out of 5 as far as the mill is concerned there is one Indian.

Mr. Richardson.—Yes.

Mr. Rahimtoola.—What is his salary?

Mr. Richardson.—His salary is Rs. 150 a month.

Mr. Rahimtoola.—As far as the office is concerned, how many are Indians?

Mr. Richardson.—One.

Mr. Rahimtoola.—You have no idea as to the total number of men in the office in the superior staff?

Mr. Richardson.—I am afraid I can't tell you.

Mr. Rahimtoola.—But you will be able to send it on to us?

Mr. Richardson.—Do you refer to the Managing Directors? If you refer to the Managing Directors, there are 5 or 6 Managing Directors.

President.—Is there any part of the Head Office which may be considered as being definitely concerned with the work of the paper mill?

Mr. Richardson.—Yes.

President.—That is to say you take that section of the Head Office. Would it be possible for you to give us the numbers?

Mr. Richardson.—Even if you take a section of the office, the same difficulty arises.

President.—You will be able to get definite figures so far as the mill is concerned?

Mr. Richardson.—Yes.

President.—Any attempt to make some statement with regard to the Head Office will be attended with practical difficulties?

Mr. Richardson.—Yes.

Mr. Rahimtoola.—Will you give me the number of men drawing Rs. 500 and more in your office?

Mr. Cameron.—You mean those exclusively concerned with the paper business?

Mr. Rahimtoola.—Yes. We are not concerned with the whole staff. I am only concerned with the paper section at present.

Mr. Cameron.—Absolutely concerned with the paper department, there are two.

Mr. Rahimtoola.—Out of which none are Indians?

Mr. Cameron.—No.

Mr. Rahimtoola.—I want only the people connected directly or indirectly with the paper business.

Mr. Richardson.—So far as the paper business is concerned, there are only two.

Mr. Rahimtoola.—None of them is an Indian?

Mr. Richardson.—Quite.

Mr. Rahimtoola.—In answer to question 2, you have just now told us in reply to the Chairman's question that the actual working of the last three months is 198 tons per month.

Mr. Richardson.—Yes.

Mr. Rahimtoola.—That means you have very nearly reached the full capacity of the plant.

Mr. Richardson.—As at present, yes.

Mr. Rahimtoola.—You think it is likely to continue?

Mr. Richardson.—It just depends on the amount of repairs that these digesters may require. Next month if something happens to these digesters, we have no spare digester to make up the deficiency in output. Again if our crushers stop for experimental purposes, then we can't maintain full capacity. All these experiments affect the production.

Mr. Rahimtoola.—145.6 tons of bamboo pulp per month was due to the experiments.

Mr. Richardson.—That is the output obtained actually with the experimental work being carried on simultaneously.

Mr. Rahimtoola.—I understand also that the process that you are now adopting in your mill is no longer a patent.

Mr. Richardson.—That is correct.

Mr. Rahimtoola.—You gave us to understand that all the unbleached paper that you are making is entirely made for Government.

Mr. Richardson.—Almost entirely.

Mr. Rahimtoola.—May I know whether Government has made any stipulation as to the amount or percentage of wood pulp required in that paper.

Mr. McKenzie.—In the last specification there was no stipulation except that the paper should contain a percentage of indigenous pulp.

Mr. Rahimtoola.—That is the agreement of 1931-32.

Mr. McKenzie.—Tender for 1931-32. That was the first time when it was said that a percentage of indigenous pulp should be there.

Mr. Rahimtoola.—There is no stipulation now to the effect that certain percentage of wood pulp would be required by Government?

Mr. Richardson.—Previously they stipulated that there should be a certain percentage of wood pulp in the case of certain special classes of paper. Last year that was altered and they said that the papers should contain a percentage of indigenous pulp.

Mr. Rahimtoola.—May I know why Government two years ago required certain amount of wood pulp?

Mr. Richardson.—We don't know.

Mr. Rahimtoola.—Nor are you able to find out the reason?

Mr. Richardson.—No.

Mr. Rahimtoola.—In answer to question 7 you have said that you have no experience regarding kraft papers. I conclude that you don't make any kraft papers? Are you aware of any other mill making kraft paper in India?

Mr. Richardson.—No.

Mr. Rahimtoola.—As regards the question of grass paper you told the Chairman that there are distinctive qualities between the grass paper and the bamboo paper.

Mr. Richardson.—That is correct.

Mr. Rahimtoola.—But according to you, you have taken an optimistic view, viz., that you will in course of time be able to replace the grass paper by bamboo paper.

Mr. Richardson.—I think I said that we hoped we would be able to produce a paper which would be equally suitable for the purposes for which grass paper is now used and that it would be a matter for the customer to choose which paper he would require.

Mr. Rahimtoola.—Are you in a position to say that you will be able to change the present taste of consumers? There are people at present who prefer the grass paper.

Mr. Richardson.—We hope later on to be able to produce a paper which they would willingly accept.

Mr. Rahimtoola.—Which they would willingly accept as a change?

Mr. Richardson.—That is correct.

Mr. Rahimtoola.—But you don't think that you will be able to give them the exact quality of grass paper say from the point of view of strength and bulk.

Mr. Richardson.—We may not be able to give them a paper of the same strength as grass paper, but we may be able to give them something which is quite as good.

Mr. Rahimtoola.—In your reply to Question 8, you say that it was found that the supplies from Cachar and Sylhet proved cheaper owing to contract system and therefore it was decided in 1925 to abandon direct working of the Kasalong Reserve for the time being and obtain your requirements through contractors.

Mr. Richardson.—Yes.

Mr. Rahimtoola.—Your opinion is that direct working proved excessive in price.

Mr. Richardson.—Yes.

Mr. Rahimtoola.—What was the actual difference?

Mr. Richardson.—The Chittagong prices are referred to in our reply to Question 9 (see page 5). There you will see that in 1924-25 we paid Rs. 50 per ton.

Mr. Rahimtoola.—That is entirely due to your own working?

Mr. Richardson.—Yes.

Mr. Rahimtoola.—Since when did the contractors begin to work? As far as I can gather from your reply to Question 8, the departmental working was abandoned in 1925.

Mr. Richardson.—About that time.

Mr. Rahimtoola.—Between the price which you paid in 1925-26 and in 1924-25 there is not a great difference.

Mr. Cameron.—You will note that in the year 1927-28 we purchased no bamboo from Chittagong, but in the following year we purchased from Chittagong at a difference of approximately Rs. 9. After we stopped working the Chittagong area departmentally, the contractors in Chittagong believed that they were in a position to demand from us this high price of Rs. 47-6 which as you pointed out was not very much lower than our departmental working. We felt that if we could show, even for one season, that we were quite independent of them, and obtained our requirements from elsewhere, it would make a difference. In 1928-29 we purchased at a price which was lower than the original price by Rs. 9, and we attribute the reduction in price to that.

President.—Did you make any purchases 1927-28?

Mr. Cameron.—Nothing from Chittagong. We obtained all our requirements from Assam.

Mr. Rahimtoola.—Do all the figures given on page 5 refer to Chittagong?

Mr. Cameron.—Yes, without overhead.

Mr. Rahimtoola.—What is exactly the duty of the Forest Manager as far as the Chittagong area is concerned?

Mr. Cameron.—As far as the Chittagong area is concerned, he has no special duty beyond what he has in any other area from which we are buying bamboo. His main duty is to negotiate with the contractors before the contract is entered into.

Mr. Rahimtoola.—Is the contract for a definite number of years?

Mr. Cameron.—They are only annual contracts. Previously we made contracts which ran for 3 or 5 years. They have all expired. We are now making fresh contracts each year.

Mr. Rahimtoola.—You enter into a contract after your Forest Manager has seen the contractor and done all the preliminary work. But what is his work for the rest of the time?

Mr. Cameron.—He keeps in touch with the contractors. They are all local men. They are small people in different villages. In the course of extracting bamboo they frequently require assistance. Almost all our bamboos come from Government Reserve Forests. Frequently the contractors want help from the Forest Department and our Forest Manager spends a good deal of time corresponding over matters of this kind. Generally, he keeps in touch with contractors and advises them whenever necessary. Apart from that he is concerned with seeing that we don't take more bamboo from any one section of the forest than is good for it.

Mr. Rahimtoola.—As far as I understand, you are working only on muli or melocanna bamboo?

Mr. Richardson.—Yes.

Mr. Rahimtoola.—And your cost price is in the neighbourhood of Rs. 42.

Mr. Richardson.—Yes.

Mr. Rahimtoola.—You also have given us to understand that if you change to other classes of bamboo you are likely to get the cost further reduced.

Mr. Richardson.—Yes.

Mr. Rahimtoola.—Do I understand that it means a different type of bamboo?

Mr. Richardson.—Yes.

Mr. Rahimtoola.—As regards Question No. 10 you say that you have no complaint to make regarding the freight but then you have sent a separate supplementary statement.

Mr. Richardson.—This question refers only to materials.

Mr. Rahimtoola.—As far as materials are concerned your position is just the same?

Mr. Richardson.—Yes.

Mr. Boag.—In your answers to questions 2 and 3, you point out that while the capacity of your pulp is 200 tons a month, the capacity of your paper machine is something over 500 tons.

Mr. Richardson.—Approximately 6,000 tons a year.

Mr. Boag.—Are you contemplating increasing your pulp plant so as to do away with that inequality?

Mr. Richardson.—That is the object. We intend to bring the pulp plant up to the capacity of the paper machine.

Mr. Boag.—How far have you got towards attaining that object?

Mr. Richardson.—We are carrying out experiments as you have seen the other day in our pulp section. The other part of the question is one which must depend on the financial position of the Company. If we had the money to invest, these experiments lead us to believe that we would be justified in placing the orders.

Mr. Boag.—What is hanging you up is partly that you are awaiting the results of your experiments and partly your financial position.

Mr. Richardson.—More especially the latter.

Mr. Boag.—With regard to the areas from which you get your supplies of bamboo you have said just now that the areas in Assam from which you get your supplies are mainly Government forests.

Mr. Richardson.—Yes.

Mr. Boag.—Have you any information about the extent of these forests or the quantity of bamboo they can supply?

Mr. Richardson.—We have no definite information as to the actual quantities. All that we feel is that from our experience and from the information our Forest Manager has given us there is no doubt about the supply being sufficient.

Mr. Boag.—For your present requirements?

Mr. Richardson.—Yes, and also for our future requirements.

Mr. Boag.—That is what I was coming on to. If as you say you are contemplating an increase in your pulp plant and if you are going to produce the quantity of pulp necessary to keep your paper machines in full working, it means that you will want more than twice the quantity of bamboo that you are getting now.

Mr. Richardson.—We shall require 14/15,000 tons of bamboo.

Mr. Boag.—That is nearly three times the amount you are getting now.

Mr. McKenzie.—We had over 7,000 tons this year.

Mr. Boag.—Have you made any enquiries whether these forests from which you are getting your main supplies will stand such exploitation?

Mr. Cameron.—We have a good deal of information about that. When we started dealing with contractors in Assam, before anything was done, our Forest Manager made a tour of the whole area and sent his report to us at that time. As far as bamboo is concerned there is no doubt as to the quantity available.

Mr. Boag.—Did he mention any quantity which was obtainable from these areas?

Mr. Cameron.—His report at that time had reference to what he considered the economic supplies obtainable having regard to the labour available. It is an entirely different figure to the total bamboo which may be found in these forests. During last cold weather he went fully into the question

and actually prepared a draft programme and a list of contracts for the full quantity that would be required for an output of 6,000 tons of pulp per annum showing where he proposed to get the supplies from and in what quantities. He said that he would have no difficulty in arranging contracts in accordance with the actual programme which he drew up.

President.—Does that mean taking into account the labour supply available you would be able to get without difficulty about 15,000 tons of bamboo?

Mr. Cameron.—Yes.

President.—The real point is: have you got definite figures of the available supplies based upon actual investigation? That is what we wanted to know.

Mr. Richardson.—We have not got that here now. May I refer you in this connection to the remarks on page 72 of the Board's Report of 1925:—"Whatever difficulties may await the Indian Paper Industry its supply of raw materials is secure." They are very definite about that.

President.—It is a statement which we should like to make more definite in this enquiry. As you know, that is a general statement.

Mr. Richardson.—We have not actually made any estimates beyond our own anticipated requirement but as you know we are the pioneers of this industry. We have been using large quantities of bamboo all these years and therefore our opinion might be taken to be correct that the supply is ample. There is no doubt in our minds whatsoever about that.

President.—The present areas that you have leased in Kasalong and Assam would give you easily any quantity that you want?

Mr. Richardson.—We have no doubt whatever.

Mr. Boag.—About these new areas that you are considering in Bihar and Orissa, have you made any enquiries as to the quantities available there?

Mr. Richardson.—We have no definite information here. Our Forest Manager has gone round the area and he believes that there are large quantities available.

Mr. Boag.—Are these also Government Forests?

Mr. Richardson.—Some of them; and some of them are privately owned. People have leases of them.

Mr. Boag.—You have no definite information?

Mr. Richardson.—Not about tonnage, but we are told that there is plenty of bamboo which is a general term.

Mr. Boag.—It is a very elastic term.

Mr. Richardson.—We admit that.

President.—In this enquiry we have to get down to hard facts and the fairly general statements which were considered sufficient in 1925 would not be quite sufficient now. We are trying to get definite figures based on surveys as far as possible. We have two things to consider. We have definite forest surveys which have been made in certain areas. These surveys give you a figure of the total available supply. Then you have to consider whether in relation to the transport facilities available you can get your figure of supply which can actually be extracted under present conditions. We would like this time to be able to get definite figures.

Mr. Richardson.—We shall try and give you this information.

President.—It would be very useful if you could.

Mr. Richardson.—Yes.

President.—Coming to Question 11, the main difficulty, apart from financial difficulties, which you have experienced during the past five years on the bamboo question has been regarding the mechanical treatment of bamboo.

Mr. Richardson.—Preliminary crushing treatment.

President.—That would be included in the term mechanical treatment.

Mr. Richardson.—Yes.

President.—Let me understand first your present method of mechanical treatment. I take it that bamboo comes to you split.

Mr. Richardson.—Split in bundles.

President.—Then, before it goes to the crusher, it is soaked?

Mr. Richardson.—Not at present.

President.—It goes in as split bamboo straight into the crusher?

Mr. Richardson.—Yes.

President.—At present your crusher contains five pairs of rolls.

Mr. Richardson.—Yes.

President.—Each pair has a different surface arrangement.

Mr. Richardson.—Yes.

President.—Before the bamboo passes through the five pairs of rolls, it gets crushed?

Mr. Richardson.—Bamboo is fed directly into the rolls.

President.—Bamboo is fed into the rolls, crushed in the rolls and before it emerges from the rolls do you get it in manageable sizes?

Mr. Richardson.—It is cut.

Mr. McKenzie.—It goes through the rolls first of all.

President.—It is cut into what size?

Mr. McKenzie.—2 inches.

President.—When it is cut and crushed, it goes into the splintering machine?

Mr. Richardson.—Yes.

President.—The idea of a splintering machine is to open the thing out.

Mr. McKenzie.—To break it into smaller pieces.

President.—To make it easier for the liquor to penetrate?

Mr. McKenzie.—Yes.

President.—So that your bamboo is split, is crushed, is cut and is splintered and then it is fed into the digester.

Mr. Richardson.—There are two splintering machines in series.

President.—Then it goes into the digester?

Mr. McKenzie.—No. It is first dusted and cleaned.

President.—After it has been dusted and cleaned it goes into the digester?

Mr. McKenzie.—Yes.

President.—Now the process that you employ is the acid process?

Mr. McKenzie.—Yes.

President.—The digestion process is the acid process?

Mr. McKenzie.—An acid process. But it must not be confused with the wood pulp acid process.

President.—In the usual process it is calcium bi-sulphite and in yours it is magnesium bi-sulphite, that is to say the raw material is not limestone but the raw material is magnesite.

Mr. McKenzie.—Yes.

President.—What precisely is the reason for making this adjustment?

Mr. McKenzie.—The main reason is that no one has yet succeeded in producing easy bleaching sulphite pulp from bamboo with a lime base.

President.—Who ever had any experience of this matter?

Mr. McKenzie.—Mr. Raitt has tried it.

President.—Mr. Raitt had, as far as I am in a position to judge, very few facilities for testing the acid process on bamboo.

Mr. McKenzie.—That is correct. In some of the Southern States of America where the temperature in summer is very high approximating

to Semi-Tropical conditions magnesium bi-sulphite is used for wood pulp instead of lime.

President.—That is to say the variation is largely due to climatic conditions?

Mr. McKenzie.—Not in our case. Even if we had to work in a cold country we would have to use magnesite as far as bamboo is concerned.

President.—Am I right in understanding that it is necessary in the case of bamboo to have a process which is not quite so acid in character?

Mr. McKenzie.—Quite right.

President.—That is to say, the position of bamboo is such that for the proper treatment of bamboo you need to have a digesting liquor which would be on the one hand sufficient to treat the lignin sufficiently which requires acid, and at the same time would be sufficiently alkaline to deal effectively with the pectones. Therefore the point of the magnesium process is that to some extent it combines the characteristics of the acid process and the alkaline process.

Mr. McKenzie.—It does to a certain extent.

President.—Bamboo standing midway between grass and wood requires a process which stands midway between the acid and alkaline processes. At this stage I should like to discuss the question of the variations which have occurred in the cost of pulp since 1924. I want to state straightaway that one figure in this comparative statement of costs that you have given us I find very difficult to accept as it stands in your reply; that is yield of bamboo pulp.

Mr. McKenzie.—Mr. Raitt's estimates are based on air dry bamboo and ours are based on bone dry bamboo. That makes a difference of 10 per cent.

President.—I want to compare the progress which you have made in efficiency of practice in 1930-31 as compared with 1924-25 and one point on which I should like to get a little light is, what is the progress that you have made in 1930-31 in the matter of yield of dry pulp that you get from bamboo. That to my mind is one of the important tests by which efficiency in a paper mill can be determined.

Mr. McKenzie.—I think we got as high a yield as it was possible to get in 1930-31.

President.—In 1924-25 if you were able to get as high a figure as 44 per cent. dry, that is to say a year and a half after you started operation, that statement would require a good deal of confirmation. You must remember that at that time your crushing experiments were in the initial stage.

Mr. McKenzie.—That would not affect the yield.

President.—That would affect the yield if you are taking the pulp from bamboo.

Mr. Richardson.—The quality of the pulp is affected.

President.—If you take bamboo which is badly treated mechanically when it goes through the digestion process as a result of that you are bound to have a certain amount of wastage.

Mr. McKenzie.—You will get a bad cook.

President.—If it contains a good deal of imperfectly dissolved fibre that would have to be treated again?

Mr. McKenzie.—No.

President.—The only result then of a bad cook is to affect the quality of the paper?

Mr. McKenzie.—Yes, we have to make an inferior quality of paper.

President.—Your contention then would be that 44 per cent. or the maximum available yield of pulp from bamboo was obtained by you in 1924? This 44 per cent. according to your statement is the average?

Mr. McKenzie.—Quite right.

President.—It is an average based upon the working of five or six years?

Mr. McKenzie.—Yes.

President.—You started from a lower figure and you worked up to a higher figure and then you got an average of 44 per cent.; is that right?

Mr. McKenzie.—It may be possible the variation was very small.

President.—There are two ways in which you can get an average. You actually got your 44 per cent. in 1924; you have got that again in 1931; and your average is 44. Or you start with 40 and then at the other end you get somewhere about 48 per cent. which is more than bamboo can yield!

Mr. McKenzie.—There may have been a slight improvement.

Mr. Richardson.—So far as the yield is concerned in 1924 we were very much where we are to-day.

President.—As regards your sulphur consumption we find that the position is that while the average consumption of sulphur was 5.0 in 1924-25 it is 6.3 now.

Mr. McKenzie.—That is correct.

President.—That calculating on the weight of dry bamboo was 11 per cent. in 1924 and it is 14 per cent. now.

Mr. McKenzie.—Yes.

President.—For the moment I am not entirely satisfied that you could not get back without any increase in output to this original figure.

Mr. McKenzie.—I am quite sure we can. The reason we raised our percentage was to cut out bad cooks. Our mechanical treatment was at the bottom of the whole thing. We have to raise our sulphur to get results from bamboo which would give us the maximum price for the paper made.

President.—Have you any information about the normal percentage of sulphur in the usual sulphite process?

Mr. McKenzie.—Somewhere about 300 lbs. of sulphur per ton of air dry pulp and that is on the basis of 2,000 lbs. per ton. That is a fairly high figure.

President.—Any way you think that in the near future it would be possible for you to bring down your consumption of sulphur without spoiling the quality of the paper to somewhere about 11 per cent.?

Mr. McKenzie.—We are definitely of the view on the basis of calculations made that we shall be able to effect a saving of 35 per cent. on sulphur. That saving is due to our new fibre separating machine and recovery of SO_2 .

President.—Taking this recovery of SO_2 can you tell me what is the recovery percentage of SO_2 in terms of sulphur?

Mr. McKenzie.—It is not measured.

President.—Is there any kind of standard which is applied for testing SO_2 recovery?

Mr. McKenzie.—No.

President.—The only way in which you can test it is by looking at the fresh quantity of sulphur used?

Mr. McKenzie.—Yes.

President.—You can't test it as they do in the soda process?

Mr. McKenzie.—No.

President.—Irrespective of any arrangement that you may make hereafter for recovery of SO_2 , can you make any reduction in sulphur?

Mr. McKenzie.—15 per cent. immediately on the new machine.

President.—Can you give me some idea of the relative position in 1930-31, that is to say relative to 1924-25 in regard to the consumption of coal? You have given your actual consumption entirely in terms of money value. What

I want to get at is this. The Tariff Board in 1924-25 considered this question in regard to three mills and they found that they consumed 5 tons of coal per ton of paper in 1923-24, the coal used being second class coal. I should like to know whether it would be possible for you to give us a figure for coal consumption which would be comparable with the figure that the Board gave in 1924-25.

Mr. Cameron.—The total coal consumption in 1924-25 was 12,366 tons. On page 1 of the answers to the questionnaire, we show that the pulp produced in 1924-25 was 2,035 tons. On page 6 of the answers to the supplementary questionnaire we have explained our reasons for estimating that the consumption of coal per ton of pulp in 1924-25 was 2.6 tons. If we multiply the actual production of pulp by that coal figure of 2.6, it will be seen that, of the total consumption, 5,291 tons went into the pulp stage. That leaves 7,345 tons of coal for paper. The output of paper was 2,544.8 tons which is equivalent to 2.88 tons of coal per ton of paper.

President.—2.8 plus 2.6 was the total consumption of coal per ton of paper.

Mr. Cameron.—Yes.

President.—That comes to 5.4.

Mr. Cameron.—Yes.—Actually the apparent coal consumption per ton of paper is rather less. It appears a little under 5 tons, because part of that paper was made from wood pulp which requires no coal in the first stage, so that although 2.6 plus 2.8 is 5.4, if you divide the total coal consumption by the paper made it comes to a little less.

President.—So that when the Board said 5 tons, it was more or less correct.

Mr. Cameron.—Yes. In answer to question 48 we have given details of the coal consumption for 1930-31 allocated to the various sections of the plant. We have taken first of all 93 tons of coal from the power section of the plant as applicable to pulp. That is calculated on the horse power of the electric motors used in the pulp section. We have then taken the coal that is used for power throughout the mill other than for pulp and it comes to 827 tons. The balance is for the digesters. The total consumption of coal in the pulp stage is 93 tons for power, plus 362 tons for cooking the pulp. That is a total of 455 tons, and is equivalent, as we show at the bottom of that paragraph, to 2.78 tons per ton of pulp. If we take the 827 tons which remains for paper and divide it by $\frac{1}{17}$ th of the annual production, i.e., 515.65 tons, we get 1.604 tons coal per ton of paper. Comparing the two years you will see that the pulp remains practically the same. Actually there is a slight increase which we attribute to the fact that we are now using a different grade of coal from what we used in 1924-25.

President.—The difference in the quantity has a good deal to do with the quality of coal now used?

Mr. Cameron.—We use a little more coal in the pulp stage and we are using a grade of coal which is about Rs. 2 a ton cheaper quite apart from market fluctuations.

President.—The point that we have reached now is that you consume at present 4.38 tons of slack coal per ton of paper as compared with about 5 tons of second class steam coal in 1924-25.

Mr. Cameron.—Yes, 5.4.

President.—After you make allowance for the imported pulp, it comes to 5.

Mr. Cameron.—Assuming that we had not imported any pulp, it would be 5.4 against 4.38.

President.—So that if you made your paper entirely from pulp made at your mills, you would be using to-day 4.38 tons of slack coal as against 5.4 tons of second class steam coal in 1924.

Mr. Cameron.—Yes, but that is without making any provision for the increased efficiency and economy which would automatically take place if the pulp plant was extended.

President.—That assumes that pulp is produced on a basis of 200 tons per month.

Mr. Cameron.—Yes.

President.—And paper is produced at 500 tons a month. If we assume further that pulp would be produced on a scale equivalent to 500 tons of paper, there would of course be further economies, but it would be difficult to assess it.

Mr. Richardson.—We have endeavoured to assess them.

President.—You have given 35 per cent., but that 35 per cent. covers economies that arise not merely from an increase in the output of your pulp plant but it assumes the introduction of the Deckering system.

Mr. Richardson.—It also assumes an efficient crusher which enables us to cook in quicker time, saving steam and consequently saving coal.

President.—There are various points in it which would really enable you to make a conjectural estimate. Here you have a definite concrete figure which to my mind indicates two things. The first is taking simply the paper part of your mill, a reduction from 2·88 of superior coal to 1·6 of inferior coal has been brought about to a large extent as the result of increase in output, and partly also as the result of improvements in your power plant.

Mr. Richardson.—Yes.

President.—So far as pulp is concerned there has been a reduction from 2·8 tons of superior coal to 2·78 of inferior coal.

Mr. Cameron.—The figure for paper in 1924 was 2·88. The pulp figure was 2·6.

President.—The corresponding pulp figure now is 2·7.

Mr. Cameron.—Yes.

President.—Therefore as far as the pulp section is concerned your figure was 2·6 tons of superior coal in 1924-25. It is 2·78 tons of inferior coal now.

Mr. Cameron.—Yes.

President.—Except on a basis of cost it is quite impossible to make any comparison at that stage. What really is the coal consumption on pulp in 1924 is impossible to tell because the qualities of coal are different.

Mr. Cameron.—Yes.

President.—Supposing you took the price of slack coal in 1924-25 and tried to express 2·6 tons of superior coal in terms of slack coal, would you be able to do it? You are right in the middle of the coal.

Mr. Richardson.—The money equivalent is what we look at.

President.—If you take the money equivalent of 2·6 tons of second class steam coal in 1924 and convert it on the basis of money to slack coal taking the price of slack coal in 1924-25 and give me the corresponding slack coal figure, straightaway I get a basis of comparison.

Mr. Richardson.—You have got to consider this: slack coal to-day may be of a different price. It is not due to the quality, but because of more demand. I asked our Coal Department and they told me that to-day, slack coal may be very much more in demand and probably it would be of a higher price than in 1924-25. Therefore the quality does not come into it.

President.—You can give me the prices delivered at Naihati of second class steam coal and slack coal in 1924-25.

Mr. McKenzie.—Yes. On page 19 of the replies to the questionnaire we give the rate of Rs. 11-3-0 for the coal which we were actually using in 1924.

President.—That is the price of second class steam coal in 1924.

Mr. McKenzie.—Yes.

President.—Can you give me the price of slack coal or whatever then corresponded to it?

Mr. Richardson.—It is very difficult to say, but it would be about Rs. 8-8-0.

Mr. McKenzie.—The actual difference in price at that time was Rs. 2-8 per ton.

President.—I take this figure of Rs. 8-8-0 subject to the reservation you have mentioned. It is not a figure to be taken as the exact equivalent. It represents a rough approximation of slack coal delivered at Naihati in 1924-25. Is it possible for you to give some idea of the progress that has been made in respect of consumption of bleach? That you see does not strictly arise from the pulp answer, but since we are on the question, we might just as well deal with it. I want to know the present consumption of bleaching powder per ton of unbleached pulp and the equivalent figure in 1924-25. There is one difficulty which occurred to me in thinking of that and that is that you have got to mean the same thing by bleaching powder. There might be bleaching powder which contains more chlorine. In one class of bleaching powder it may contain more chlorine than another. Would it be possible for you to give me the consumption of bleach per ton of unbleached pulp in 1930-31 and in 1924-25 on the assumption that the bleaching powder in both cases contains 30 per cent. chlorine.

Mr. McKenzie.—Our bleaching powder normally contains 35 to 37 per cent. available chlorine. In 1930-31 we used a considerable quantity of perchloron.

President.—Won't you be able to convert it?

Mr. McKenzie.—The perchloron in practice did not work out according to our expectation.

President.—Would you be able to give me a figure for 1929-30 and 1924-25?

Mr. McKenzie.—Yes.

President.—Your bleach is 34 to 35.

Mr. McKenzie.—35 to 37 per cent.

Mr. Cameron.—On page 15 we have given it for 1929-30. The figure is per ton of bleached paper made.

President.—I want it per ton of unbleached pulp. If you can convert the paper in terms of unbleached pulp, you have got your usual conversion figure. You can simply use that conversion figure. It is simply a matter of arithmetic.

Mr. Cameron.—I will give the figures to you after lunch.

President.—You give your average cooking time as 13 hours with all the improvements that you have been able to get in the mechanical treatment.

Mr. McKenzie.—That was what we obtained.

President.—How does that compare with the normal acid practice in European countries?

Mr. McKenzie.—I hardly think there is such a thing as normal acid practice. There are very large variations in different countries.

President.—In the soda process we are able to get more or less standardised figures in these things. You know what normally under reasonable conditions steaming time should be in a digester.

Mr. McKenzie.—Yes.

President.—What pressure and so on. What is the kind of corresponding figure for normal acid process?

Mr. McKenzie.—Cooking time may vary from 12 to 45 hours according to the quality of pulp required.

President.—Would 18 be considered a reasonable figure?

Mr. McKenzie.—In 1920 that was considered a reasonable figure in Sweden.

President.—In the sulphite process on wood?

Mr. McKenzie.—Yes. If we are producing a strong pulp, we can cut down the time by about a third.

President.—1920 is a long way off.

Mr. McKenzie.—Yes. In some American mills they are working down to as low as 9 hours per cook.

President.—Surely there must be some kind of standard to judge a very important factor like the steaming time.

Mr. McKenzie.—In the "Manufacture of Pulp and Paper" published under the direction of the Joint Committee of the Vocational Education Committee of the Pulp and Paper Industry of the United States and Canada the cooking time given for easy bleaching pulp is 15 to 18 hours.

President.—How recent is that information?

Mr. McKenzie.—That book was published I think about 1923, but I am not sure. I am not certain about the date of the publication.

President.—What is the time given?

Mr. McKenzie.—15 to 18 hours for an easy bleaching pulp and 11½ to 18 hours for a strong pulp.

President.—You cannot get anything later than that?

Mr. McKenzie.—I am afraid not.

President.—At what kind of pressure is this?

Mr. McKenzie.—Before we start talking about pressure I may say that the sulphite process as applied to wood is entirely different from ours. In the wood sulphite process we may have 75 lbs. pressure before the liquor reaches boiling point. There is enormous gas pressure.

President.—In your case the steaming time is calculated from the time when the boiling point is reached.

Mr. McKenzie.—No, from the time when the digester goes under steam.

President.—From the moment digestion becomes effective.

Mr. McKenzie.—From the moment the steam is turned on to the moment when the digestion is complete. That is the whole cooking time.

President.—As a matter of fact it is quite impossible to make any comparison on these tests between the acid process and the alkali process.

Mr. McKenzie.—There is really no possible comparison.

President.—The only comparison is between your results and normal results in the sulphite process on wood pulp.

Mr. McKenzie.—Yes.

President.—Therefore there is a big uncertain factor for you do not know the difference in the characteristics of both wood and bamboo. After all you are using two entirely different materials. In the process also you are using magnesite and they are using calcium there. Unless you are in a position to determine the allowances that are to be made for these factors no comparison is possible.

Mr. McKenzie.—In connection with magnesite may I read one or two extracts from the same book which I mentioned a little while ago?

President.—Yes.

Mr. McKenzie.—"The quality of the lime or dolomite used for liquor making is of the greatest importance and its value increases with the amount of magnesia which it contains."

* * * * *

"Some manufacturers favour the milk-of-lime system on account of the high magnesia content of the acid, which they consider beneficial in the cooking process."

President.—You are trying to justify the magnesium process?

Mr. McKenzie.—No, it justifies itself.

President.—The only point that interests me about that is this. We in India have come to regard Mr. Raitt as the authority on matters relating to bamboo and I gather from Mr. Raitt's recent book on the digestion of grass and bamboo that he considers that even with the application of magnesite the acid process is not likely to give satisfactory results with regard to bamboo.

Mr. McKenzie.—I do not know whether Mr. Raitt has had the opportunity to make sufficient experiments to justify a statement of that kind.

President.—I do not know where he got those results. As a matter of fact we enquired when we were at Dehra Dun whether there was any part of their experimental plant where the results of the acid process on bamboo could be tested. My own impression was that they did not.

Mr. McKenzie.—I understand they have no plant for treating bamboo by the acid process.

President.—There is no part of the world where the magnesite-acid process is applied to bamboo except at Naihati?

Mr. McKenzie.—That is quite true.

President.—If it could not be done in the laboratory at Dehra Dun and if your results do not confirm the figures given by Mr. Raitt . . .

Mr. McKenzie.—We think we have definitely disproved some of Mr. Raitt's statements regarding the sulphite process. That is possibly because he has not had the same opportunity as ourselves to make the experiments, as a result of which our experts have modified the sulphite process to suit bamboo.

President.—He tried also magnesia. The kind of pulp that he got was yellow in colour. The discolouration was in his opinion so serious that the resulting pulp could be used only for badamis and browns. I must confess looking at the figures purely as a layman I find it difficult to understand the statement.

Mr. McKenzie.—I think that Mr. Raitt has not had opportunities to make experiments on a scale which would lead him to definite conclusions.

President.—I don't think that we can carry the question any further.

Mr. Rahimtoola.—You are already aware from Question 2 how much importance the Board is attaching to this aspect of the question. Will you please tell us whether there are more experiments to be made regarding the development of the bamboo pulp?

Mr. Richardson.—Beyond what we have shewn you?

Mr. Rahimtoola.—Yes.

Mr. Richardson.—We have shewn you everything that we have.

Mr. Rahimtoola.—You state in your answer to question 11 "Modifications in plant and machinery which have already been undertaken have, we think, been sufficiently outlined above and at the present time we have no other particular experimental machine in view".

Mr. Richardson.—That is so.

Mr. Rahimtoola.—That is to say you have completed your experimental stage?

Mr. Richardson.—No. It means that we have gone as far as we can with the finance available.

Mr. Rahimtoola.—You have pointed out that the difficulty you had in not being able to commence your work on the development of bamboo was mainly financial.

Mr. Richardson.—Yes.

Mr. Rahimtoola.—You are aware of the reason why Government could not agree to the recommendations of the Tariff Board namely that yours

being a patent process owned by a private company Government was not in a position to accept the recommendations of the Indian Tariff Board. Owing to financial conditions you left out the extension of the pulp plant and devoted your whole attention to the question of paper.

Mr. Richardson.—We had no other alternative.

Mr. Rahimtoola.—Because you could not carry on otherwise.

Mr. Richardson.—Exactly.

Mr. Rahimtoola.—As regards the statement of Mr. McKenzie that Mr. Raitt has not made sufficient experiments which would lead him to definite conclusions regarding your process, is there anything like co-operation between the Dehra Dun Forest Research Institute and the mills on this side?

Mr. Richardson.—They don't use our process.

Mr. Rahimtoola.—Are they allowed to visit your mills?

Mr. Richardson.—They have visited our mills.

Mr. McKenzie.—Mr. Bhargava has been to our mills.

Mr. Rahimtoola.—He has seen your process?

Mr. McKenzie.—Yes.

Mr. Rahimtoola.—Mr. Bhargava was allowed to go through the mills?

Mr. McKenzie.—There is nothing to hide. They can see the mills.

Mr. Rahimtoola.—I take it that there is absolute co-operation between the Institute and the Mills in this country as far as paper is concerned?

Mr. Richardson.—As far as we are concerned, we would be pleased to have any assistance which the Institute can render us.

Mr. Rahimtoola.—Have you asked for assistance from the Institute?

Mr. Richardson.—Beyond the visit of Mr. Bhargava we have never had any correspondence.

Mr. Rahimtoola.—Have you asked for assistance?

Mr. McKenzie.—There is no equipment in Dehra Dun to test bamboo under the system which we are working.

Mr. Rahimtoola.—You say on page 11 "We do not believe any appreciable further reduction is likely at present. A reduction in cost might be obtainable by the use of bamboo from other areas but its economical treatment is dependent on the suitability of preliminary mechanical treatment and, as we have explained above our experiments in this connection do not permit us to form a decision on this possibility at present". Does that remain the same now?

Mr. Richardson.—Yes.

Mr. Rahimtoola.—You have not had any experiments?

Mr. Richardson.—We are making experiments.

Mr. Rahimtoola.—You are not in a position to make any definite statement on the results of your experiments?

Mr. Richardson.—No.

Mr. Rahimtoola.—But you are hopeful?

Mr. Richardson.—We are hopeful.

Mr. Boag.—You have described the mechanism of crushers but I gather from what you give here and what you have told us that you are not satisfied with that.

Mr. McKenzie.—No, we are not.

Mr. Boag.—Could you indicate what the faults are in the present crusher?

Mr. McKenzie.—It is a question of the treatment not being sufficiently regular. The treated bamboo is irregular and contains small and large pieces. We must have a plant which will eliminate this irregularity. When the bamboo loaded to the digester contains large pieces mixed with the bulk of small pieces we have to cook to suit the largest pieces which results

in increased time of cooking and the consumption of far more chemical than would otherwise be necessary.

Mr. Boag.—How are you trying to get over that defect?

Mr. Richardson.—We have gone through a number of stages and we have at last arrived at one which we think will give us the final solution of the problem. The results are better than what we have had before.

Mr. Boag.—Could you say what are the essential differences between this and the crusher that you are now using?

Mr. Richardson.—In the mechanical part of it?

Mr. Boag.—Yes.

Mr. Richardson.—The new machines are smaller and will treat smaller quantities of bamboo and we get more even and regular pressure on the bamboo in the crushing stage.

Mr. Boag.—The pressure is more even.

Mr. Richardson.—Yes.

President.—What exactly is it in the mechanical arrangement of these crushers that makes the particular difference. The heavier the crusher, the more effective it is?

Mr. McKenzie.—Not necessarily.

President.—It is a question of relating the weight of the crusher to the kind of surface arrangements you provide in the crusher. I am speaking with reference to the mechanical arrangement. When you say you had made progress from one type of crusher to another type of crusher I am trying to see in which direction you are progressing as far as the mechanical arrangement is concerned. Bamboo has got a rather elusive surface. One difficulty as far as I was able to judge when observing things is that you are not able easily to get a crusher that will get a grip of it. Am I right in putting it in that way?

Mr. McKenzie.—How exactly do you describe?

(President explained it.)

Mr. McKenzie.—We have no difficulty in that respect with the bamboo we are now using.

Mr. Boag.—Are you using the fibre separating machines?

Mr. Richardson.—We are using them continuously.

Mr. Boag.—What proportion of your bamboo is dealt with by that machine?

Mr. Richardson.—Only a very small proportion.

Mr. Boag.—Have you made up your mind yet that this is the solution for the mechanical trouble?

Mr. Richardson.—We are still investigating. The whole object of the investigation is to get an even fibre and so far as we can see the present machine has given us the best results we have ever had.

President.—You separate the fibre in such a way that the liquor spreads evenly through it?

Richardson.—Yes.

President.—The point of that I suppose is to increase the quantity that you put into your digesters?

Mr. McKenzie.—Not altogether but for better treatment.

Mr. Boag.—In the sense that it is all accessible to the liquor?

Mr. McKenzie.—Yes.

Mr. Boag.—What is the capacity of your digesters?

Mr. McKenzie.—9 tons of dry bamboo. The capacity is limited by the amount of acid you can put in. As a result of various experiments we have made we find that we can reduce acid consumption by 15 per cent. Actually

however instead of reducing the volume of the acid this would remain as before and the bamboo charged would be increased by 15 per cent. which gives 15 per cent. increased capacity to the digesters, showing an immediate saving of 15 per cent. in steam and 15 per cent. in chemicals.

President.—That would practically mean that with the reduction in the proportion of liquor you could manage to put about 11 tons of air dry bamboo.

Mr. McKenzie.—10½ tons.

Mr. Cameron.—I can now give you the consumption of bleaching powder per ton of unbleached pulp. In 1924-25 the consumption was 3·514 cwts. I have divided first the actual consumption of bleaching powder by the tonnage of bleached paper made; then I have multiplied the result by $\frac{22}{25}$ which is the ratio of bone dry unbleached pulp to finished paper without taking into account any leading. On the same basis for 1929-30 the figure is 2·586 cwts., or a reduction of almost exactly 1 cwt.

President.—There is just one point in regard to question 12. You are importing two classes of pulp—easy bleaching and strong bleachable sulphite wood pulp. Both these are unbleached pulp, are they not?

Mr. McKenzie.—Yes.

President.—You have been using since 1929 reduced quantities of easy bleaching and correspondingly increasing strong bleached wood pulp. The point I am trying to raise is this: that while you are using during the past two or three years more or less the same quantity of imported pulp, the proportion of easy bleaching and strong pulp that you have taken has varied from year to year, since 1925.

Mr. McKenzie.—That is so.

President.—Although some years show a considerable increase, on the whole you seem to be reducing the quantity of easy bleaching and increasing strong sulphite pulp? What precisely is the difference from the point of view of quality between easy bleaching and strong sulphite pulp?

Mr. McKenzie.—For equivalent grades, the price of strong sulphite wood pulp is not quite so high.

President.—Strong sulphite is cheaper than easy bleaching?

Mr. McKenzie.—Yes.

President.—And the relative cheapness of strong sulphite is neutralised by the extra quantity of bleach that is used?

Mr. McKenzie.—Partly.

President.—That is assuming that you try to make the same classes of paper from both kinds of pulp. Am I right in thinking that generally strong sulphite wood pulp is used for inferior classes of paper?

Mr. McKenzie.—No. There are two kinds of strong sulphite; we use a strong bleachable pulp.

President.—You can use strong sulphite for your white paper also, can you?

Mr. McKenzie.—Yes.

President.—By using a sufficient quantity of bleach and making up the deficiency in the raw material?

Mr. McKenzie.—Yes.

President.—Therefore from the point of view of economical working there is really not very much difference?

Mr. McKenzie.—That depends upon the difference in price, but usually there is not much in it.

President.—You don't care to elaborate in any detail, do you, the general opinion expressed in answer to question 15 that economic reasons will force up the price of imported wood pulp? We have heard that ever since the Tariff Board got interested in paper!

Mr. Richardson.—We have given an answer to that in our supplementary replies.

President.—It is further evidence more or less of the same character.

Mr. Richardson.—We admit it is very difficult to give any definite reasons.

President.—All that we are entitled to say, assuming that we take this evidence at its face value, is that scarcity of wood pulp is bound to occur at some time, say in the course of ten years—may be sooner. It is impossible to arrive at any opinion which has any practical bearing on this problem.

Mr. Richardson.—We think so too.

President.—A part of the present low price of imported pulp is a reflection of the general depression in commodity prices.

Mr. Richardson.—That is so.

President.—But partly it is due to production of imported pulp in excess of the demand there is for it.

Mr. Richardson.—That must be so.

President.—The available quantities of wood pulp produced are in excess of the demand?

Mr. Richardson.—Yes, at present.

President.—You draw our attention to the conference of pulp manufacturers which met last October in which they decided to adopt a restriction programme to the extent of 15 per cent. of last year's output. That came into force in October; since then you tell us there have been further negotiations with a view to a further reduction of 15 per cent.?

Mr. Richardson.—Yes.

President.—The evidence seems to be that further restriction may take place.

Mr. Richardson.—We think that is very probable.

President.—Along with the proposal for these restrictions there have been serious strikes in Scandinavian mills which have brought about a sort of enforced restriction of production of pulp. Taking 15 per cent. restriction which has come into force and three or four months stoppage of working in the Scandinavian mills owing to labour trouble am I justified in thinking that in the immediate future there might be an upward trend in pulp prices?

Mr. Richardson.—That is the idea of the mills but whether that will be the result it is very difficult to forecast.

President.—If you take the kind of demand there was in 1930-31 which of course was considerably less than the demand in the previous year, and if we assume that the demand cannot go down then this restriction proposal must necessarily have the effect of driving the price in a different direction.

Mr. Richardson.—If you assume that, I agree.

President.—Is there any kind of opinion which has crystallised in the minds of paper manufacturers of the effect of this restriction proposal on the price in the immediate future? Has there been any discussion in the trade journals?

Mr. Richardson.—Nothing beyond what information we have given to the Board.

President.—Reading between the lines of the letters that you have sent us, I have got the impression that these manufacturers are expecting a slight upward trend and these are the people who can speak for the paper industry. What is the latest quotation for imported easy bleaching pulp that you have got?

Mr. Cameron.—We were quoted £9-7-6 for American pulp.

President.—What is the latest Scandinavian quotation that you have received? Anything lower than £10-10-0?

Mr. Cameron.—I think we received a quotation of £10-7-6.

President.—How long ago was that?

Mr. Cameron.—Last week.

President.—So that it is a figure which indicates the present state of the market?

Mr. Richardson.—That is a quotation for a contract for delivery in 1931-32.

President.—Last year I find from your figures you were able to get easy bleaching pulp delivered at the mills at Rs. 185 per ton for 1931-32. That means that the pulp which you are using in the mills now is pulp that you were able to get at Rs. 185 delivered at the mills.

Mr. Cameron.—Yes at present, but the purchases shown for 1931-32 are only those already made, and do not constitute our full requirements for the two years.

President.—2,400 tons shown for 1931-32 in Statement B is pulp which you purchased at Rs. 185-9. This is a statement of purchase?

Mr. Richardson.—Yes.

President.—These are purchases which were made with reference to quotations which ruled when?

Mr. Richardson.—About a year ago.

Mr. Cameron.—Actually there was some adjustment with regard to this 1931-32 purchase. We originally purchased a quantity for 1931 under a contract made over a year ago. In October 1930 it was decided to purchase a further quantity for 1932 and a new contract was made at an average price to apply equally for 1931 and 1932.

Mr. Richardson.—To make a sort of average.

President.—Roughly I suppose one is justified in saying that between now and 12 months ago there has been a fall in prices. This figure of £13-7-2 which is the c.i.f. price may be taken roughly as the average price about a year ago.

Mr. Richardson.—Then the fall would be about £3.

President.—If you take the latest quotation of £10-7-6, c.i.f. Calcutta, what would be the cost in rupees delivered at your mill?

Mr. Richardson.—Landing charges Rs. 2-12, Transport charges 2-11, say about Rs. 5-8.

President.—That would be Rs. 145.

Mr. Richardson.—Yes.

President.—If you take the lowest quotation touched, viz., Rs. 145 at the mills it would be a difference of Rs. 40.

Mr. Richardson.—Yes.

President.—Going back to the other question, £10-7-6 is a quotation for delivery next year. After the restriction was agreed to in October sufficient time must have elapsed for the restriction proposals to produce an effect on the market.

Mr. Richardson.—I should think so.

Mr. Rahimtoola.—In answer to question 11 you say that your Forest Manager is satisfied that there will be no difficulty in obtaining sufficient bamboo from Assam. I just want to know how the Forest Manager satisfies himself. Did he give you any figures?

Mr. Richardson.—The Forest Manager lives there. He continually travels over a very large area seeing contractors and seeing the forest people concerned. On that experience which is now over 4 years he has based his opinion and we have no reason to doubt his statement.

Mr. Rahimtoola.—He has not given any actual figures?

Mr. Richardson.—Not for the total available quantities.

Mr. Rahimtoola.—Nor have you asked for any figures?

Mr. Richardson.—Not beyond our estimated requirements.

Mr. Rahimtoola.—In answer to question 14 you say “as our mills are at present equipped a minimum quantity of imported pulp is required”. Do I understand that this state of things will remain for a long time?

Mr. Richardson.—It depends on the continuance of protection.

Mr. Rahimtoola.—If there is no protection this thing will remain?

Mr. Richardson.—One can't say what will happen. Probably the mill will go out of operation altogether.

Mr. Rahimtoola.—We will deal with that question later on. I want to know whether you are absolutely compelled as at present equipped to use a certain quantity of wood pulp.

Mr. Richardson.—We are absolutely compelled to use it. Our bamboo pulp plant is only capable of producing a certain amount and in order to make the paper machine work to its full capacity the wood pulp is absolutely necessary.

Mr. Rahimtoola.—In answer to question 15 you say “there is no doubt that the majority of the Pulp Mills are only just paying their expenses or even selling at a loss in some cases”. That statement is based on the price of Rs. 185 for wood pulp, is that correct?

Mr. Richardson.—It is based on the facts that we have seen. It is based also on the fact that we have seen the mills desiring to reduce their output in order to increase their price.

Mr. Rahimtoola.—I want to know on what price have you based this conclusion?

Mr. Richardson.—Not necessarily on Rs. 185. I should say more on the recent quotations that we have obtained.

Mr. Rahimtoola.—You were in possession of those figures when you sent in this statement?

Mr. Richardson.—We knew the prices were very much lower than the figures we have given you. These figures were from the actual purchases made. We have always got weekly reports of the market prices.

Mr. Rahimtoola.—This is based on your experience as a result of negotiations with firms in Scandinavia?

Mr. Richardson.—We don't negotiate with them actually but our London Agents do.

Mr. Rahimtoola.—They keep in close touch with them?

Mr. Richardson.—Yes.

Mr. Rahimtoola.—In answer to question 18 you have given the price of China clay. You say “The fact that we have purchased most of our clay abroad at approximately Rs. 68 per ton, against Rs. 50 for the best Indian clay, shows the importance we attach to quality”. Why such a high price was paid?

Mr. Richardson.—That showed we considered it paid us to give the extra amount, because the Indian clay did damage to the paper machine wire.

Mr. Rahimtoola.—Have you tried Cossimbazar clay?

Mr. McKenzie.—We have tried Cossimbazar clay. At present we are not using any English clay.

Mr. Rahimtoola.—You are using Indian clay?

Mr. McKenzie.—Yes. We will only use the balance of English clay now lying in stock and we have none on order.

Mr. Rahimtoola.—You are satisfied at present with the present quality?

Mr. McKenzie.—Yes. If it is maintained we can use Indian clay entirely.

President.—You have stated your answer to question 25 so fully that I do not want to go into it in detail, but just to get the general line of your

argument clearly, I should like you to explain it with reference to the trade figures so that we shall be able to understand a little more clearly. The general conclusion of your argument on that is that the additional capturable market for the Indian industry is approximately 15,000 tons.

Mr. Richardson.—That is the figure we have given.

President.—You have based this figure on the trade returns of 1929-30 and not 1930-31.

Mr. Cameron.—1930-31.

President.—The figures of 1930-31 are to some extent abnormal figures, because they reflect not merely the depression which has arisen in the pulp industry, but it is also a reflection of the general depression in trade which became acute about the end of 1929-30. So in order to estimate the market which may be available for Indian paper, it might be better to take a year which is a little less abnormal than 1930-31.

Mr. Richardson.—In that case it would probably give us 20,000 tons.

President.—The first item is packing paper which for 1929-30 is 14,342 tons. As far as you are concerned you exclude that?

Mr. Richardson.—Yes.

President.—The next item is protected newsprint which is a very small item of 375 tons. It makes no difference.

Mr. Richardson.—Quite.

President.—The not protected newsprint is 23,912. The whole of that is excluded?

Mr. Richardson.—Yes.

President.—There are other sorts of printing protected—8,171 tons. The snag as far as that is concerned is that the protective duty was made in the original proposals of the Tariff Board to apply not merely to paper which the Indian paper mills can produce, but also to highpriced paper on which the application of the protective duty would make no difference to the duty actually paid by them.

Mr. Richardson.—It is very difficult to say how much of it can be cut out.

President.—What exactly is the basis?

Mr. Richardson.—It is arbitrary.

President.—Not protected other sorts of paper is 7,817.

Mr. Cameron.—We have taken 85 per cent. of the protected printing and 70 per cent. of the non-protected.

President.—Then the next item is writing paper protected. What proportion of that do you take?

Mr. Richardson.—70 per cent.

President.—Old newspapers you exclude?

Mr. Richardson.—Yes.

President.—Other kinds of paper?

Mr. Richardson.—We exclude that.

President.—As far as you are concerned you exclude paste board, millboard and strawboard manufactures.

Mr. Richardson.—Yes, we exclude that.

President.—How much does it come to?

Mr. Cameron.—Just over 20,000 tons.

President.—That you consider is the additional capturable market.

Mr. Richardson.—Under normal conditions that would be the market.

President.—There is one factor which you have not taken into account. Bombay is one of the largest distributing centres of paper. Whatever kind of protection may be given to the Indian Paper Industry, there must ultimately be a certain quantity of paper which on account of freight disadvantage and the disadvantage of not being in direct touch with the dealers,

will be permanently outside your reach. The percentages that you have taken have been taken with respect entirely to the qualities of papers manufactured by the industry. You have not taken into account at all that part of the market which the Indian industry would not be able to capture not on grounds of quality but on grounds of freight disadvantage, disadvantage of establishing sufficient trade connections and questions of that kind. After all, we are all primarily interested in bamboo. Bamboo is confined for the time being to the Bengal Mills. Therefore looking at the question from the point of view of bamboo paper you have not got an estimate of the additional market taking into account all the qualities which may be manufactured by the Indian Paper Industry—the quantity which the Indian Paper Industry could conveniently capture.

Mr. Richardson.—We are unable to say the amount.

President.—You must remember this includes Rangoon; this includes the whole of Madras and the whole of Bombay which is a very large centre. This includes that part of the Karachi market which it would be difficult for you to capture. I do not know on what basis to make an allowance for those factors. Supposing we did make allowances for these factors, we have to discount this figure of 20,000 tons very considerably. The point I want to suggest is this. It might possibly arise in the course of the examination later. Since all the Indian mills are on this side of India more or less working to capacity—and working somewhat to more than capacity—and considering also that there are parts of the Indian market which on account of freight considerations may be permanently outside your reach has not the position been arrived at by the Indian Paper Industry where with further assistance a state of over-production may result?

Mr. Richardson.—I do not accept that we cannot compete in Bombay. We are nearer than the importing mills.

President.—You can compete provided you are given a suitable degree of protection.

Mr. Richardson.—Supposing after ten years, after we have made all the economies we have suggested.....

President.—The whole question is whether we can put on the country a burden so great as to make it possible for mills on the Bengal side to make a reasonable profit for themselves after incurring all the large freight charges from a centre like Calcutta to a centre like Bombay.

Mr. Richardson.—As it is a question of national importance cannot we come under the Imperial umbrella so to speak?

President.—We are administering a policy of discriminating protection. That is a point which would arise again later on. There was one point which I wanted to raise but omitted by oversight. You have given us figures to enable us to make a comparison between your pulp position in 1930-31 and your pulp position in 1924-25. I should like to know if a similar statement could be prepared which would enable us to compare the paper position in 1930-31 with that in 1924-25. You might make suggestions also. The kind of thing I have in view is this. The big improvements that you have made since 1925 as I understand them are first the experiments and the arrangements based on those experiments for the proper mechanical treatment of bamboo. Then you have improved the power arrangements. You have your new boilers which you installed in 1927 and you have your new machines. In order to present a complete picture of the relative position in 1930-31 and in 1924-25 it looks to me along with the cost of pulp we must have a corresponding statement for paper. Could you give me a statement which would give the cost of converting unbleached pulp into finished paper in 1924-25 and in 1930-31?

Mr. Cameron.—It can be very easily done.

President.—It is possible to do it?

Mr. Cameron.—Yes.

President.—As I visualise it, that statement will enable us to say what the cost of conversion per ton of unbleached pulp was in 1924-25 and what it is in 1930-31.

Mr. Richardson.—Yes.

President.—That statement should be accompanied as in the case of the pulp statement by a note explaining the reasons for the variation.

Mr. Cameron.—We shall do that.

President.—Also in order to make the statement quite complete you might tell us what the wastage is on unbleached pulp. That of course we know in the process of conversion from the pulp stage into finished paper. It is really in the proportion of 44 to 42.

Mr. Cameron.—Yes.

President.—That 42 per cent. would apply in 1924-25.

Mr. Cameron.—Yes.

President.—44 also applies.

Mr. Cameron.—Yes.

President.—The introduction of a new paper machine and the increase in the output of paper would not make any difference.

Mr. Richardson.—No.

President.—You can send in your statement with a full explanation of everything that is necessary.

Mr. Cameron.—Yes, we can do that.

President.—Coming to your reply to Question 27, you don't consider under present conditions that there is any reasonable prospect of India exporting bamboo pulp.

Mr. Richardson.—We are quite definite about that under present conditions.

President.—If the latest quotation that you have given us is correct, it means a price of Rs. 140 c.i.f. Calcutta more or less and Rs. 140 c.i.f. Calcutta for imported pulp would, I fancy, mean about Rs. 100 f.o.b. Calcutta for pulp exported from India.

Mr. Richardson.—Yes.

President.—So that unless you could bring down your cost of bamboo pulp to something less than Rs. 100 f.o.b. Calcutta, this question of the export market we can rule out.

Mr. Richardson.—In the present abnormal conditions, it is impossible to consider it.

President.—The next point I want to raise is the import duty on wood pulp. Your general argument is that if protection is granted to paper solely by means of a duty on imported paper without offering anything in the way of direct encouragement for the development of bamboo, then the result would be that protection would set a direct premium on the use of imported pulp so long as the prices of imported pulp remain what they are.

Mr. Richardson.—Exactly.

President.—Therefore in order to prevent the encouragement under a protective system of the use of imported pulp at the expense of bamboo pulp it is necessary that if a protective duty on paper is levied it should be accompanied by an import duty on imported wood pulp.

Mr. Richardson.—Yes.

President.—And the precise scheme that you suggest is this. Considering that the existing mills have entered into definite commitments with regard to the use of imported pulp and have not made sufficient progress

with development of the bamboo pulp it is necessary for a certain interim period to make arrangements which will not be disadvantageous to the existing mills.

Mr. Richardson.—We have put this suggestion forward merely as an alternative for one which was put forward previously considering the objections that were made to that by the previous Board.

President.—The proposal which was actually made by the Board in 1925 was for direct capital assistance.

Mr. Richardson.—I am referring to our own suggestion regarding the duty on imported pulp in 1924-25. We suggested then that a duty on imported pulp should be levied immediately. For various reasons the Board did not find it possible to do so. Therefore to meet those objections we have suggested direct encouragement in this way. We don't say that the object is to permit the mills who have made forward contracts to use imported pulp or anything of that sort.

President.—The interim arrangement that you propose then is the result of the objections that were made by the Board in their proposals.

Mr. Richardson.—It is to meet the circumstances as they were raised by the Board at that time.

President.—Let us assume for the moment that this Board would approve the objections made in 1925 to the scheme of an import duty in which provision was not made for interim difficulties. Your suggestion on that basis is that up to the end of March 1934 mills should be allowed to import wood pulp free of duty to the extent of the average of the previous three years consumption.

Mr. Richardson.—That is to meet the objection raised by the other mills that they must have time to order the machinery and make arrangements for the use of bamboo.

President.—From the 1st April 1934 your proposal is that the free allowance of the imported wood pulp should be reduced gradually by 20 per cent. each year.

Mr. Richardson.—That is to meet the objection of the other mills that they should be allowed to import a certain percentage of wood pulp.

President.—Until at last a permanent free allowance of 25 per cent. is provided.

Mr. Richardson.—Yes.

President.—Before going into the merits of the question of a duty on imported pulp I should like to draw your attention to what I conceive to be the practical objections to a scheme which provides for interim difficulties in this way. The first difficulty that occurs to me is, what happens in the case of a new mill? If you had a new mill started next year, on what basis would this free allowance be regulated?

Mr. Richardson.—In the case of a new mill we must presume that it would be started under any protective scheme approved by Government, and that it must be aware that it would have to use bamboo.

President.—This is to say your idea is that no new mill should be started after the next Protection Act which is not in a position to use indigenous materials or prepared to use the wood pulp at the increased cost.

Mr. Richardson.—Quite so.

President.—What would you say to a mill like the Rajahmundry Mill which has been struggling for the past few years? Their output during 1930-31 was about 130 tons. They say quite definitely that they have put their operations now on a regular basis. In their case the mill is already in the field. It is not a new mill in the sense that it starts all its organisation from next year. It is there already, having, so to speak, a vested interest. In their case you cannot calculate the percentage on 130 tons a year.

Mr. Richardson.—One might take it in that case on the output capacity of the machine, which would be measured in accordance with what we call the Deckle.

President.—There are different kinds of machines.

Mr. Richardson.—The capacity of a machine is I believe judged by the Deckle.

President.—Expressed in so many inches?

Mr. Richardson.—Yes.

President.—Taking the Rajahmundry case, you would allow that mill up to the end of March 1934 a quota of pulp which corresponds to their capacity.

Mr. Richardson.—Yes.

President.—After that the reduction of 20 per cent. would be calculated on the free allowance granted to them up to March 1934.

Mr. Richardson.—Yes. I think that it would be fair to do that.

President.—What about the mills on the Bombay side? The mills on the Bombay side are in a peculiar position. As far as I know there are no definite bamboo areas available to the Bombay mills. There has been to my knowledge no definite forest survey of the likely areas and therefore the Deccan Paper Mills would be perfectly justified in saying to Government "This is not a fair test to be applied to us. Even under favourable conditions it is impossible to use bamboo pulp".

Mr. Richardson.—Is protection going to be granted on the basis of bamboo or not? It would depend on that.

President.—The whole idea behind the policy of protection is to work it out in such a way that no interests which are now in existence are unfairly treated—unfairly treated for reasons for which they are not altogether responsible. You cannot very well turn round to the Deccan Paper Mills and say "It is perfectly true you cannot get bamboo even if you want it. But for the sake of Bengal mills, you must submit".

Mr. Richardson.—Would the duty on imported pulp affect them?

President.—Very much. A large part of their output is made from imported pulp.

Mr. Richardson.—Then they are not entitled to protection?

President.—That is quite true; but I don't want to put them under a handicap which does not exist now.

Mr. Richardson.—If you don't place them under a handicap the suggestion is that we should be placed under a handicap?

President.—The point I am trying to raise now is, you suggest a scheme for the development of bamboo pulp which has the effect of imposing a fresh handicap upon mills which are now in existence. That is an objection on practical grounds to the particular proposal which you have made. You must remember that after all these things would have to receive a certain amount of popular support and the proposal that you make must be one which has a reasonable chance of being accepted. Where you have a scheme which definitely benefits one group of mills against another then the difficulty of getting sufficient support for that proposal in my opinion would be rather great.

Mr. Cameron.—Might it not be looked at from the other point of view? That, assuming there were no mills in this country which were developing its resources, and basing their claim to protection thereon, then there would be no protection. In that case the mills on the Bombay side would be competing with imported paper without the assistance of any protection on paper. Assuming that a case for protection is established by another group of mills using indigenous fibre, and it is granted, that, as a result, the Bombay mills also benefit but through no merit of their own might not that be set against the handicap? Even if they experience a handicap as

a result of the duty on pulp, they would be no worse off as a result of the combined duty on pulp and paper, than if there were no duty on either.

President.—Provided that can be established. Supposing the fact was this: an investigation was made and it was found that the imposition of an import duty on wood pulp would have the effect of making it more or less impossible for the Deccan mills, for instance, to compete with imported paper of the classes which they make, then you would agree that it would be unfair intervention?

Mr. Cameron.—It would be an unfair intervention if the pulp duty only is considered but would it be any more against their interest than if they were left without any protection on paper? If without any handicap on pulp, they had to compete without assistance on the paper side their case would be much worse.

President.—Supposing you granted protection to a certain group of mills in this country, in the first place there is a certain *prima facie* unfairness; if on the top of that there is the result of making it impossible for the mills against which you make this differentiation to compete and practically resulting in their closing down, then you are adding insult to injury.

Mr. Cameron.—There is a second point which we have made tentatively. In our original answer to this question we suggested that if it was decided that an import duty on wood pulp was justified, then there should be a corresponding additional protection on paper. If that is taken into account, might it not be so worked out that the two duties should be in line and there would be no unfairness to anyone?

President.—That is to say any duty on imported pulp must necessarily imply a corresponding compensatory duty on paper?

Mr. Cameron.—Yes, from the point of view of protecting a mill which is entirely dependent on imported pulp.

President.—How exactly would you measure the rate of duty that may be required for compensating a mill which used imported pulp?

Mr. Richardson.—I have mentioned in answer to Question 27 that the duty on wood pulp should be somewhat higher in order that the use of wood pulp should be definitely discouraged.

President.—The difficulty that occurs to me is this. If you levy an import duty on wood pulp it has the obvious effect of making wood pulp more expensive. Under your scheme on the Bengal side the consumption of wood pulp would be gradually reduced from 100 to 25 per cent. in the course of five years. Therefore if I were trying to determine the rate of compensatory duty on these conditions, I might probably take the consumption of wood pulp over the whole period of five years as being on an average 50 per cent. of the output.

Mr. Richardson.—Yes.

President.—Therefore I would try to compensate them on the assumption that their material cost has gone up over the whole present consumption of pulp to the extent of 50 per cent. of the duty. Would that be right?

Mr. Cameron.—Yes.

President.—Supposing the Deccan mills are using 100 per cent. imported pulp, that arrangement obviously would not suit them. If I were providing this compensatory protection by means of a bounty then I could adjust it according to local conditions, but if you are doing it by means of an import duty there is no way of differentiating, so that the element of unfairness remains.

Mr. Richardson.—Then we come to the question of those who are entitled and those who are not entitled.

President.—If it were simply a question of differentiating against new mills which are started after the Protection Act comes into force that would be a different matter, but where there are mills already in existence and you are regarding the matter as a practical proposition, you can't work it out.

Mr. Richardson.—I think the mills in Southern India are in a more favourable position than we are to supply that market. Cannot that be taken into consideration?

President.—We have their costs; it is simply a question of fact. Supposing the effect is that they are unable to face competition if a scheme of the kind that you propose is worked out then it looks to me, as a practical question it is not quite so easy to wipe that out and say that they have got to. It does not strike me as a reasonable proposition.

Mr. Richardson.—On the other hand to give some effective encouragement to bamboo I see no other alternative than what I have proposed.

President.—Speaking personally, I think the general argument which you have put forward has some force; that is to say, if you are going to give protection to bamboo paper by means of an import duty levied generally and you provide no direct assistance for bamboo pulp, there is a real danger of protection having the effect of encouraging the use of imported pulp and therefore it is necessary, assuming that protection is granted, to provide safeguards against the abuse of protection.

Mr. Richardson.—Quite so.

President.—The whole difficulty is one of devising a suitable practical method. I don't think it is possible for us at this stage to carry the matter further, but I simply wanted to draw your attention to the practical difficulties which the scheme involved. But there is another point which we can consider here. The duty that you propose is somewhere about 70 rupees a ton. How exactly do you get Rs. 70?

Mr. Cameron.—I should explain that these figures were only intended to illustrate the point. They do not represent our considered views as to what the amount of the duty should be.

President.—We might then work that out here. Let us refer to your cost of bamboo pulp. The figure that you give in answer to Question 48 as the works cost of bamboo paper in 1930-31 is Rs. 196-6. That does not include depreciation, profit and interest charges?

Mr. Cameron.—No.

President.—In arriving at this figure of Rs. 196-6 you have taken the cost of bamboo as Rs. 44 per ton at the mills?

Mr. Cameron.—Yes.

President.—Actually you are now getting your bamboo at least Rs. 2 cheaper?

Mr. Cameron.—Yes.

President.—I take it that means that your present works cost of bamboo pulp would be Rs. 5 less?

Mr. Cameron.—Yes.

President.—So that the figure of Rs. 196-6 has to be cut down to Rs. 191-6?

Mr. Cameron.—That is right.

Mr. Richardson.—I think I might explain that this Rs. 42 that we are talking about is really a reduction on account of increased orders placed during the year. These people in their eagerness to supply bamboo exceeded their contracts with the result that we may have to have reduced supplies next year which again may have the effect of putting up the price to Rs. 44 next year, so that I don't think we can take the figure of Rs. 42 as a real reduction.

President.—Can you tell me precisely what was the quantity purchased in 1929-30?

Mr. Cameron.—2,600 tons.

President.—What were your purchases in 1930-31?

Mr. Cameron.—It was intended to be 5,500 tons but actually we were supplied with 7,000 tons.

President.—7,000 tons of bamboo corresponds to 2,800 tons of pulp?

Mr. Cameron.—Yes. Rather more I think. 2,800 tons represents only 40 per cent. yield.

President.—If you were working your pulp plant to capacity you would require 2,700 tons?

Mr. Cameron.—2,400 tons is the capacity.

President.—I am taking for the time being air dry pulp; your air dry pulp would be 2,650 tons?

Mr. Cameron.—Yes.

President.—Actually the purchases that you made in 1930-31 correspond to 2,800 tons of pulp. I should say that if we are to calculate the duty which is to be levied on imported pulp we must take the purchase price that you pay for the bamboo on the assumption that you buy bamboo according to your pulp capacity. Taking the price of bamboo as Rs. 42 per ton that gives you a reduction of Rs. 2 which brings the works cost down to Rs. 191.6. I find, looking through your 1930-31 figures in answer to Question 2 of supplementary questions, that the wages cost included not merely the cost of current operations but also included labour expenditure in connection with the erection of your crushing machinery.

Mr. Cameron.—That is so.

President.—Now that you have come more or less to the end of the stage with regard to mechanical treatment am I justified in making a reduction in your labour cost on 1930-31 corresponding to the amount spent on the crushing machinery?

Mr. Richardson.—I don't think we can agree to that. We have been doing experiments of some nature or other for the past 10 years and we will always be doing some experimental work. Then we have a certain amount of skilled labour in the mill which is always kept when not occupied on mill repair.

Mr. Cameron.—Experimental work is not separately allocated.

President.—What about sulphur? *Mr. McKenzie* definitely told us this morning that the reduction of sulphur to 11 per cent. is within the range of possibility.

Mr. McKenzie.—Provided we have new machinery.

President.—So that if you are providing for the future we can make it on the assumption that the machinery is there. If you get back to 5 cwt. per ton of pulp that would straightaway mean a reduction of Rs. 6 in your cost. If we are going to levy an import duty on wood pulp we can not fix that duty in such a way as to make it possible for you to continue a practice which is obviously uneconomic. The duty must be based on the assumption that reasonable economies have been made. That gives us a figure of Rs. 185. In 1930-31 approximately the price of imported pulp at your mills was Rs. 185. It is perfectly true that while the present intense depression lasts it might be that pulp prices would be lower. The point that I am considering is this. After all your scheme does not come into operation till 1934. We are now in 1931. Assuming the normal conditions of 1929-30, it looks to me that your works cost of bamboo pulp would be approximately the same as your cost of imported pulp delivered at the mill. We obviously cannot take the immediate current prices when the scheme itself would come into operation in 1934.

Mr. Richardson.—If that is so, it is left to the mills to use whichever is cheaper. There is no direct encouragement to bamboo.

President.—My point is this: taking your cost of bamboo pulp as worked out in 1930-31, the works cost of manufactured pulp in the immediate future would not exceed the cost of imported pulp delivered at the mills. I am perfectly willing to admit that it does not make any provision for depreciation and interest charges. This is simply works cost.

Mr. Richardson.—Yes.

President.—Supposing in fixing the rate of protection (assuming we do recommend protection) for paper on the basis of capitalization which provides

for a self-contained paper and pulp plant, then it is unnecessary to make any provision for depreciation and interest charges. The whole of it would be covered at that end, so that for a scheme of import duty on wood pulp which is not expected to operate until 1934 and providing also that protection for paper is based on a capitalization considered sufficient for a self-contained plant—not merely on the ground of practical difficulties, even on the ground of facts that you have supplied to us—there is very little case for the duty.

Mr. Richardson.—Supposing we go back to our original proposition that the duty should be imposed at once.

President.—That is a point I would have to consider and in considering that I am up against all the criticisms that we have made. As a matter of fact the examination of these figures, in my opinion—it is a point entirely to your credit—suggests this that if these figures really conform to facts, to the actual practice in the mills, what it seems to indicate is that you can trust to the inherent economy of bamboo pulp to ensure development.

Mr. Richardson.—That is what it comes to, but it does not give encouragement to the people who have got their money invested should anything happen.

President.—We have at present two mills which have experimented on a considerable scale on the manufacture of paper from bamboo and another mill which has made a certain amount of progress. All of them are committed to the provision of a plant for the manufacture of bamboo pulp and while those mills are in that position, if it is established that it is more economical for them to use bamboo pulp, don't you think that it is a satisfactory conclusion from the point of view of the mills themselves which have done all this experimental work?

Mr. Richardson.—I am afraid I have nothing to argue against that.

President.—Question 29 deals with railway freight. I understand from a subsequent communication that you sent us that one of the railway companies has proposed to make a slight increase on the special rates on paper. The point that I want to get at is this. Assume that the rates proposed by the East Indian Railway are going to be enforced by all the other railways concerned. To what extent would it increase the average freights on your paper assuming the paper was sold on the scale and in the manner of 1930-31?

Mr. Cameron.—The increase which has been proposed by the East Indian Railway amounts on the average to 25 per cent. That is in the case of the stations that we have quoted in our reply. We have worked out the percentage of increase for each station separately and taken the average of the results. In Form II our average freight per ton was Rs. 14.49 for 1930-31. That actually is the freight paid divided by the production, because that is the manner in which Form II was arranged. If that freight is divided by the sales, there is a very small difference and it is Rs. 14.13. 25 per cent. saving on those figures is, in the one case Rs. 3-11-4, and in the other Rs. 3-9-11.

President.—Your average freight in 1930-31 on paper was Rs. 14.49. If these new rates were enforced by all the railways concerned, this average freight of Rs. 14.49 would have been about Rs. 17-8.

Mr. Cameron.—About Rs. 18 per ton of paper.

President.—That is the extent therefore to which your realised prices at the mills would be reduced.

Mr. Rahimtoola.—In answer to Question 25 I want to know whether you have considered the question of capturing Bombay and Rangoon markets.

Mr. Richardson.—In the percentages that we have taken, we think that allowances have been made for anything that we might not be able to capture. We have not taken a high percentage. We have left a lot of qualities altogether. As I said before these figures are arbitrary.

Mr. Rahimtoola.—The question that was raised before we adjourned for lunch was that the Chairman worked out the increase in the total Indian

demand as 20,000 tons and it was pointed out to you that that figure should also be reduced, because there were certain markets available in India which you could not reach.

Mr. Richardson.—20,000 tons were taken on the same percentages as we ourselves have taken. As we say in our reply, in the absence of more detailed information 70 per cent. of the total of unprotected printing other than news (4,208 tons) has been taken as representing the papers which have taken the place of classes which can be, and are being, manufactured in India. The remaining percentages we have taken are sufficiently low to allow for those markets which you think we would not be able to capture.

President.—That is to say, the reductions that you have made are reductions not merely with reference to the qualities of paper which cannot be manufactured, but also with reference to the markets which on account of freight disadvantage you cannot capture.

Mr. Richardson.—We do not altogether admit that it is impossible to capture those markets.

Mr. Rahimtoola.—You hope to capture in future all the 20,000 tons?

Mr. Richardson.—We think so.

Mr. Rahimtoola.—I would like to ask you a question regarding your proposed duty on wood pulp. I understand that your position is that we must stick to the previous opinion of the Indian Tariff Board of 1925 that protection must be given to bamboo paper industry.

Mr. Richardson.—That is correct.

Mr. Rahimtoola.—And we must therefore concentrate on the question of how the mills should use bamboo as against other raw materials in India.

Mr. Richardson.—Yes.

Mr. Rahimtoola.—And you are also of opinion in order that necessary encouragement be given to bamboo a duty on wood pulp is necessary.

Mr. Cameron.—May I point out at this stage that our proposal would equally encourage the development of paper mills using grass.

Mr. Rahimtoola.—May I know how?

Mr. Richardson.—The proposal that we have made regarding the import duty on pulp would equally encourage the manufacture of grass pulp.

Mr. Rahimtoola.—How?

Mr. Richardson.—Because that would increase the price of foreign pulp and give shelter to anybody manufacturing pulp in the country, no matter whether he makes it from bamboo or grass and in making this proposal we don't suggest in any way that the present Board should arrive at the same conclusions which the previous Board did.

Mr. Rahimtoola.—Do I understand that the present protective duty on paper should remain the same?

Mr. Richardson.—It depends on the pulp duty.

Mr. Rahimtoola.—We are now talking of the pulp. How will the pulp industry as such give protection to the industry without a corresponding increase of duty on paper?

Mr. Cameron.—I see your point. We have proposed at the same time that there should be a corresponding increase of duty on paper.

Mr. Rahimtoola.—I suppose that question should be considered irrespective of what the burden will be on the consumer. You know the feeling in the country about the protective duties which hit the consumer and it must be so adjusted that it will not unduly burden the consumer more than is necessary.

Mr. Richardson.—As we say on page 26, the burden is only 1·12 pies per head per annum.

Mr. Rahimtoola.—These are all very good figures to read and describes an ideal condition of things.

Mr. Richardson.—They are not only ideal; they are facts.

Mr. Rahimtoola.—Am I to understand then definitely that it is your intention that if a duty on wood pulp is not recommended it will not leave sufficient encouragement to the progress of the bamboo industry in India.

Mr. Richardson.—I don't say sufficient encouragement. We say that it will not be a direct encouragement. Under a policy of leaving the thing as it is—leaving everybody in the same position—there is no direct encouragement for the people trying to use the indigenous fibre. It is a thing, which we think, is not good.

Mr. Rahimtoola.—The Chairman has already worked out the figures in your presence where there is hardly any room for a duty.

Mr. Richardson.—That is on our future proposals and assuming certain things happen in regard to the wood pulp market. At the same time it does not give direct encouragement taking those facts into consideration.

Mr. Rahimtoola.—I take it that the increase of freight which the East Indian Railway has proposed will have effect immediately.

Mr. Richardson.—It will come into effect from the 1st of September.

Mr. Rahimtoola.—The letter was dated 23rd June and it means after the announcement of the Tariff Board's enquiry into the paper industry.

Mr. Richardson.—Yes.

Mr. Rahimtoola.—And after your letter to them and our letters to them enquiring the present rates in existence regarding paper.

Mr. Cameron.—I don't think we addressed them. We were already in possession of the current rates.

Mr. Boag.—There is just one point. These railway rates you show on page 2 of the supplementary book, are these additions to the rates printed on page 29?

Mr. Cameron.—Yes.

President.—Coming to question 30, Statement E, your classification for purposes of your books is bleached and unbleached. What I am anxious to get for our purpose is the average price that you realised for the classes of papers which have come under the protective duty. I will tell you the method on which we calculate or determine the measure of protection. We work out a fair selling price for the Indian industry including the works costs, depreciation, interest and profit. Against that you have to find a price which represents the imported price or the price determined with reference to the imported price of classes of paper corresponding to the one for which we have worked out the fair selling price.

Mr. Richardson.—Yes.

President.—Suppose I suggest that if you took your aggregate realisations for 1930-31 and deducted from them the aggregate prices that you realised or the aggregate prices which you debited yourself for wrappers used by yourselves.....

Mr. Cameron.—You want to know what it would come to?

President.—Not merely that. I want to get your average realised price in 1930-31 for the classes of paper to which the protective scheme is applied.

Mr. Richardson.—As we have said, we make 94.99 per cent. of protected paper and the rest is practically wrapper. There is a little proportion of unbleached which we sell to Government. We have already said that in considering that Government have taken the protective duty into account. So, there is only the amount of wrappers to come off.

President.—What about blottings?

Mr. Richardson.—Very little.

Mr. Cameron.—If you refer to Statement "K" showing the annual production of writing, printing and other classes of papers, you will find that "other sorts" do not come to much more than 110 tons.

Mr. Richardson.—That is a very small amount.

President.—Of the badami papers, the bulk of the unbleached is sold to Government?

Mr. Richardson.—Yes.

President.—So that if you took the price you debited yourselves for wrappers and deducted that from your total realisations for 1930-31 and if the balance were divided amongst the balance of the output, that would give you the average realisation for the protected class of paper.

Mr. Richardson.—Yes.

President.—Have you got the figure?

Mr. Richardson.—It is 3 annas 4·464 pies.

President.—That would be raised by '06.

Mr. Cameron.—A very small amount. I should explain that our figure for wrapper value is an arbitrary one. It happens to be rather on the high side.

President.—You take your wrapper at a price more or less approximating to the cheaper class.

Mr. Cameron.—Yes. It was originally adopted some years ago and for purposes of comparison we keep it on the same basis.

Mr. Boag.—How do you fix your selling price of paper? On what consideration—the cost of manufacture or the price of similar paper in the market?

Mr. Cameron.—On the price of similar paper in the market.

Mr. Boag.—Do you fix your prices in consultation with the other mills or entirely independently of other mills?

Mr. Cameron.—In consultation with the other mills.

Mr. Boag.—You fix your prices together?

Mr. Richardson.—Yes.

Mr. Boag.—Is there any difference between the prices you get and the prices obtained by the other mills for similar qualities of paper?

Mr. Richardson.—There is a slight difference. I think that although we sell at a slightly less price for reasons which I have already explained, the figures show that our averages are more or less the same. This may be due to the fact that we have a smaller output and that we are able to select our markets to a much larger extent than the other mills with bigger outputs. Therefore so far as average prices are concerned we have some slight advantage. Further we are able to maintain our sales and we have very little going out as job lots.

Mr. Boag.—That is another point I want to ask you about. What proportion of your output is sold as job lots?

Mr. Richardson.—I don't think we have any figures. It is not much more than 1 per cent. It is a very small percentage indeed.

Mr. Boag.—Have you an agreement with the other mills about fixing prices up-country?

Mr. Richardson.—We have an agreement with the other mills.

Mr. Boag.—As regards prices up-country as well as here?

Mr. Richardson.—Yes.

President.—How long have you been working in agreement with the other mills on this question?

Mr. Richardson.—Really speaking we have followed the other mills all along making such differences as might be necessary for the conditions I have already described. We have been working in agreement with the other mills in Calcutta for two years and as regards up-country for about the last 6 months.

President.—I don't propose to raise this vexed question of newsprint because you are not very much interested in it.

Mr. Richardson.—We prefer to leave that question to people who know more about it.

President.—As regards your reply to Question 41, there is something in the figure which you give as your block value which is not quite clear to me. The total block value as it stood on the 31st March 1931 in your books is given as Rs. 26 lakhs. I took your block value as it stood on the 31st March 1924 which was Rs. 42 lakhs and deducted from that all the depreciation since March 1924 as you have given it here and added to it all the additional capital expenditure which you incurred. I got a figure different from the figure you give here. The difference was approximately Rs. 5 lakhs.

Mr. Richardson.—That Rs. 5 lakhs you will find in our balance sheet for the half-year ended 31st March 1927 under the heading "Special Depreciation". A sum of Rs. 5 lakhs was received by this Company in December 1926 and it was allocated to depreciation. All I can say in regard to that is that arrangements were made with the shareholders in London. This money was received and paid into the Company's funds. It belongs to the Company and was allocated to depreciation.

President.—So that it is not a depreciation which really touches the block account.

Mr. Richardson.—It is not depreciation that was paid out of profits or surplus. For that reason we have not shown that in our answer to Question 43.

President.—Your block account should appear as Rs. 30 lakhs.

Mr. Richardson.—If the Rs. 5 lakhs were put back to the block, it should be Rs. 31 lakhs.

President.—That, of course, would be a more accurate presentation of the block account.

Mr. Richardson.—Quite true.

President.—Coming to the question of the replacement cost since you have sent in your original replies you have sent us a full statement based upon recent prices of the present replacement value of your plant. It comes to this that if you were to purchase, erect and provide with all the necessary accessories a paper and pulp plant with a capacity of 6,000 tons of paper and a corresponding pulp capacity the total cost would be somewhere about Rs. 49 lakhs.

Mr. Richardson.—Say, Rs. 50 lakhs.

President.—Say, Rs. 48 lakhs.

Mr. Richardson.—We have to allow for certain contingencies.

President.—You have provided for that even to the extent of electric fans?

Mr. Richardson.—Even so we have always found that estimates are liable to be exceeded and it would be safer to provide for that.

President.—You will remember that the Tariff Board went into this question in 1925 and they considered that a fair capitalisation for a paper plant which produced also its pulp equivalent to its paper output worked out to somewhere about Rs. 800 per ton of paper. Working on that basis a self contained pulp and paper mill with a capacity of 6,000 tons would mean 48 lakhs.

Mr. Richardson.—I accept Rs. 48 lakhs but I still think that it would cost Rs. 50 lakhs.

President.—Unless there is a very strong reason I am inclined to accept the figure arrived at by the Tariff Board. I have looked at the capitalisation figure which has been given by the other mills and after making suitable adjustments I am inclined to think that in the light of these figures the original Tariff Board was about right. They said that Rs. 800 was a fair figure for capitalisation.

Mr. McKenzie.—There are many factors affecting capital expenditure in a paper mill in this country which would not apply to an English Mill.

Mr. Richardson.—In England they don't have to provide a very expensive water plant or huge walls around the mills, also assistant's quarters and so on. All these things have to be taken into consideration.

President.—It is obviously impossible for us to scrutinise in detail an estimate of the kind you have given us and unless we are able to scrutinise the details we should not be able to tell precisely whether it is Rs. 2 lakhs short or 2 lakhs in excess.

Mr. Richardson.—We can only say that our figures are prepared in very great detail and we claim to have better knowledge of costs than any other mill because we put up a new unit recently and we know what are the actual costs.

Mr. Cameron.—May I point out that our output for 1930-31 was a little more than 6,000 tons; it was 6,188 tons. If this is multiplied by Rs. 800 the total is almost exactly 49½ lakhs.

President.—I will now take your cost statements. Let us take Form II, Statement H. Most of the relevant points in regard to costs we have already covered. The only point I want to raise in connection with this form is this. This covers your works costs of all sorts of paper. Exactly as we adjusted your statement of average prices so that it referred only to the protected classes of paper, I should like to have a similar adjustment of this. The only way in which that can be done is this. Since the classes of paper which are not protected made by you are so inconsiderable in quantity why not regard them as by-products in the statement of costs? Whatever you realise for these take them as credit realised and deduct them from the total expenditure.

Mr. Cameron.—Apart from wrapper the unprotected paper consists almost solely of blotting and cardboard and the prices we obtain for these are so closely in line with printing and writing papers that the difference would be negligible.

President.—The only thing is that when we are considering your statement of works cost, in order to make the presentation as accurate as possible you have got to make some kind of adjustment on the same lines as in regard to realised prices. Supposing I take the whole lot of wrappers which you manufacture for your use and deduct it from your total works expenditure and divide it by the balance of your output, I get a figure which corresponds to the average realised price.

Mr. Cameron.—I have the figure. It is Rs. 342·71 against Rs. 345·14.

President.—That is excluding from the works expenditure credits realised on wrapper. If we take the protected classes of paper and work that out with this adjustment, we get a price of Rs. 342·71 which is so to speak the delivery price.

Mr. Richardson.—Yes.

President.—In order to get through to the net cost you have got to deduct Rs. 14·49.

Mr. Cameron.—Yes.

President.—So that Rs. 342·71 less Rs. 14·49 or Rs. 328·22 is your works cost.

Mr. Cameron.—There is one point. You will notice from the figures we have given that if wrapper is eliminated the works cost goes down and the selling price goes up. Financial and other charges outside works cost will however increase because they will be divided by a smaller quantity of paper and that will correct the apparent anomaly.

President.—Practically in the result I don't think that the exclusion of wrappers from the realised price will make any practical difference.

Mr. Cameron.—It is very slight.

President.—Is it really worth your while making these wrappers?

Mr. Cameron.—We think so.

Mr. Richardson.—We utilise the dirty pulp, sweepings and so on.

Mr. Rahimtoola.—In answer to Question 38 you say "As however our experiments are not yet completed such machines are being used at present as auxiliaries to our original plant, which remains substantially uncharged". May I know exactly what it means?

Mr. Richardson.—We are just trying these new machines. As you saw when you visited the mill the crushing machine which has just been erected is the third of its kind. If we are satisfied with it after trial and further experiments, we hope as finance permits to instal additional similar machines.

Mr. Rahimtoola.—May I know approximately when will you be in a position to say that the machine is a success or that certain alterations are necessary?

Mr. Richardson.—That is very difficult to say.

President.—What is the approximate cost of this machine?

Mr. Richardson.—It was made in one of our own mills but we know that it is very much less than the huge crusher you saw.

Mr. Rahimtoola.—In answer to Question 40 you say "We are moreover of opinion that the general depression in trade, coupled with unsettled political conditions in India, may render it difficult to obtain further capital unless any additional protection which may be given is guaranteed for at least 10 years and is on a scale sufficient to inspire confidence in the investing public". Your opinion is that you want protection for a further period of 10 years?

Mr. Richardson.—That is the minimum period to encourage people to invest money and inspire confidence in the minds of the public.

Mr. Rahimtoola.—Your point is that the paper and pulp industry should not be considered as one single industry and that there should be two duties?

Mr. Richardson.—Yes.

Mr. Rahimtoola.—Do you incur any expenditure in England in connection with your paper mill?

Mr. Richardson.—None whatever except that we merely have to pay commission on the stores which we purchase through our London office.

Mr. Rahimtoola.—The whole industry is managed and controlled in India?

Mr. Richardson.—Yes.

सत्यमेव जयते

The Titaghur Paper Mills Company, Limited, Calcutta.

A.—WRITTEN.

(1) *Letter dated Calcutta, the 27th April, 1931.*

With reference to the Resolution of the Government of India, Department of Commerce, dated New Delhi, the 26th March 1931, we have the honour to submit the following statement of our views for the consideration of the Board and to say that we shall be glad to submit evidence in support of our case and to furnish any information in our power in furtherance of the Enquiry as required by the Board.

We take it that the Enquiry will be directed, in the first place, towards ascertaining the actual progress in the development of Bamboo as a raw material for Pulp and Papermaking since the immediate object of the Act as stated in its preamble was "to provide for the fostering and development of the industry of making paper from bamboo". On this point we are in a position to give answers which we hope will be considered very satisfactory. We also hope to show in addition, that the policy of protecting the Paper Industry in general is the most practical, most promising, as well as the most economical and generally beneficial means of fostering and developing the bamboo industry. Further, that a continuance of fiscal protection is desirable and indeed essential, in the interests of Indian industry and for the well being of the community.

It will be remembered that the original Report of the Tariff Board recommended State assistance to the Paper industry (not excluding the grass mills but definitely including them) "for a limited period in order that the possibilities of the manufacture of paper from Bamboo may be fully explored"—*vide* Report, paragraphs 133-156. We submit that we have used "this preliminary period of research and investigation" to advantage to the best of our ability. We do not propose in this letter to narrate the details of our work, describe the obstacles overcome or recount the time and money spent in attaining our present position. It is perhaps enough for present purposes to say that the progress made includes the erection of a plant which has been at work during the past year, and enables us to use bamboo for making pulp and paper at the rate of over 7,000 tons of bamboo per annum. We have also placed contracts for additional plant to enable us to increase capacity to more than 18,000 tons per annum. With this extra plant our annual output of paper made from this fibre will exceed 6,000 tons and represent about one-third of the total output of paper from our two mills. The pulp we produce by our own process is suitable for and is used by ourselves in the manufacture of all our superior qualities of paper and satisfactorily takes the place of imported woodpulp. From our experience of Bamboo we believe that it can produce pulp suitable for all descriptions of paper.

Our policy for the present is to develop the manufacture of Bamboo Pulp and Paper at our existing mills, but we have in view the possibility—should financial considerations permit—of erecting a separate Pulp mill at or near the Bamboo forest area leased by the Mills from the Government of Bihar and Orissa in October 1928. A considerable amount of spade work has been done towards the establishment of this project which may eventually be undertaken jointly with other Mills but it depends for its ultimate prosecution upon the decisions to be taken by Government in respect of adequate protection for the industry. Meantime the work we have in hand is expected to test and prove the possibilities so as to strengthen the case for the new project when the time arrives for its development. If protection is not continued the large sums spent in experimental work and in machinery and plant are likely to become unproductive.

That we have been able to accomplish so much is primarily and almost entirely due to the successful application of the policy of discriminating protection referred to in the preamble of the Act. Because of protection the

Paper Mills were enabled to secure a larger share of the Indian market for the principal qualities of paper made in the Indian mills. This enabled the Mills to fill their order books, increase production, reduce costs and ultimately **lower the selling rates.** Better filled order books enabled the mills gradually to regulate production so as to minimize the number of short runs and frequent changes on their machines, thereby securing some of the benefits of standardization and mass production as well as a reduction in the incidence of overheads due to increased output. The financial reorganization of the Company, assisted as it was by a cash contribution of Rs. 30 lakhs from the Managing Agents, considerably reduced the burden of overheads and the expenditure of large sums upon Mill reconstruction and renovation resulted in remarkable improvement in the quality of output as well as leading to actual reduction in cost and increased manufacturing capacity.

The facts mentioned in the preceding paragraph have a direct bearing upon the subject matter of the Enquiry because the two industries of pulp making and papermaking are mutually interdependent. Each is essential to the other. In India the one could never have come into existence without the other and the development of pulp-making in this country depends upon the success of the Indian paper-making industry.

The interests of the two industries must be, in the last resort, identical, for the paper mills offer a market for Bamboo pulp, the means of its conversion into paper and the organization for marketing the ultimate product, while on the other hand the development of an ample and suitable supply of staple raw material is an obvious necessity for the paper industry. For these reasons, if for no other, it followed that State assistance designed to benefit the Bamboo pulp industry, had to be applied so as to help the Paper industry in general. In the second place had there been no paper mills in the country it is perhaps doubtful if the Indian Legislature would have agreed to subsidise or assist an industry designed solely to produce pulp for export and not for local consumption. On such grounds as these we submit that the facts in regard to the improvements in the manufacture of paper are strictly germane to the present enquiry and we earnestly invite the Board to accept the view that the success of the Act of 1925 cannot be assessed fairly unless the scope of the enquiry includes examination of the progress, requirements and promise of the Paper-making Industry as a whole.

Sir Charles Innes said in the Legislative Assembly in September 1925 that Government had accepted the findings of the Tariff Board that "in so far as the paper industry is dependent on grass for the manufacture of paper its claim for protection fails". We are not concerned to comment on this declaration but have to point out that the former almost absolute dependence on grass for an indigenous raw material has disappeared, consequently the claims of our mills and of the industry in general, now stand upon a different footing. The Tariff Board said in paragraph 31 of their report while on the subject of the market for Indian mill made paper that "the whole position might be changed if more paper were made from Bamboo and if the grass mills could overcome the defects which interfere with the sale of their paper". Our claim is that we have converted these postulates into plain facts and that the position is now changed and therefore requires reconsideration especially in view of the remarkable increase during the last few years of the Indian demand for paper and in anticipation of continued growth in the requirements of the country.

We are prepared to lay before the Board evidence from official sources that the total Indian market demand as ascertained by adding total Mill production to total imports of paper (exclusive of pasteboard) increased from 99,752 tons in 1924-25 to 158,973 tons in 1929-30, *an expansion in five years of about 60 per cent.* Imports (including packing paper, old newspapers and newsprint) rose from 74,082 tons to 118,186 tons (an increase of 59.4 per cent.) while Mill production rose from 25,670 tons to 40,787 tons (an increase of 58.9 per cent.). Bearing in mind that with a market approximately

double what it was before the war the *per capita* consumption is still only in the neighbourhood of one pound of paper of all grades and classes, it is not improbable that—on the passing of the present period of depression—the demand will again increase enormously in the next few years. India at present constitutes a large market for paper. *Potentially the Indian market is of gigantic proportions.* It may therefore not be long before India's mills instead of producing a mere 40,000 tons per annum may be called upon to emulate the Japanese industry with its enormous output of over 650,000 tons of pulp and half a million tons of paper. In looking at such figures, and considering all the circumstances, it becomes clear that the claims of the Indian Paper mill industry are very great indeed and that, in the Country's interests, it is very important, that they should be recognised. The case for the Bamboo pulp industry also is not one that rests upon its possible future value in India's export trade. The industry will have enough to do to meet the growing local demand for paper. An export trade will undoubtedly develop in due time but India's first duty is to herself and she must protect her domestic interests and provide for her own increasing internal demand. To-day the dominating position in the World's paper trade happens to be held by the Woodpulp section of it based upon supplies of timber from the forests of North America, Scandinavia and Russia. Overseas interests thus at present regulate the world price of paper and were it not for the existing Indian tariff it is doubtful if the local industry could have survived the competition of foreign mills. Nevertheless we submit this is no reason for discouragement. The present time would seem opportune for safeguarding the country's interests by protecting and fostering the local industry because to-day that industry has a good standing and requires relatively small aid but is capable of great expansion and development which can be assured by judicious support at the present juncture. If such is withheld it may be disastrous for the Industry and it will most certainly be a very difficult and expensive matter to re-create it if in the meantime it is left to its fate and India is likely to have to pay dearly for the imports she will have to bring in to meet her increasing requirements.

It may be useful to summarize here without detailed arguments, some of the considerations we advance in support of our claims for protection, *viz.*—

1. We are promoting the purposes of the Act and expect success if Government does not withdraw or withhold assistance.
2. Our industry is essential to the development of bamboo.
3. It has freed itself from the need to depend upon Sabai grass while at the same time making such advantageous use of that material as to justify better appreciation of it as one of the natural advantages appertaining to the Indian Industry.
4. There is solid ground for anticipating that we can eventually do without protection, the present need arising from the world-wide depression in trade and the over-production of woodpulp.
5. The present and prospective requirements of India assure scope for enormous expansion of the comparatively small industry of the present day and India ought to take the long view in regard to her own needs and requirements.
6. Over-production of pulp to-day should not obscure the fact that supplies of timber are being used faster than they grow and that prices must eventually rise.
7. Our case is not made in the interests of exporters of her raw material but in the interests of Indian national progress because, in the words of the Fiscal Commission, the development of our industry "would be very much to the advantage of the country as a whole, creating new sources of wealth, encouraging the accumulation of Capital, enlarging the public revenues, providing more profitable employment for labour, reducing the excessive dependence of the country on the unstable profits of agriculture

and finally stimulating the national life and developing the national character ”.

8. The pulp and paper industry is a key industry whose products are such that interference with supply would bring the whole industrial system to a stop.
9. Its value was proved in the war when it saved the country large sums as well as maintaining all essential publications without a break and avoid the need for Government control.
10. The value of Indian Mill production in 1929 was Rs. 1,87,00,000 and after making full allowance for the cost of imported materials and stores, etc., the industry spends within the country over Rs. 1½ crores annually for local raw materials, chemicals, coal and wages, etc.
11. The indirect contribution of the industry to the country's welfare cannot be computed but in stimulating the development of many related industries, providing the wider and more profitable employment for labour therein and in helping to create new sources of wealth, an industry such as ours is invaluable.
12. The Indian industry safeguards the country against foreign exploitation in the event of a future woodpulp shortage or paper famine such as occurred in 1920. It ensures good service and fair prices, as is proved by the fact that in a period of falling prices whose incidence operates so as to neutralize the protective element in the Paper Duties, the Indian Mills have been able to obtain 15,000 tons more business against the keenest foreign competition.

Certain opponents to the policy of protecting the paper-making industry have attempted to prejudice the case for the Indian Mills by declaring that their imports of foreign woodpulp shewed entire disregard of the object of the Protective bill and meant sending money out of the country which ought to have been spent on indigenous materials. We have already answered these and other points in our letter of 9th July 1930 to the Commerce Department, Government of India, and enclose six copies of same herewith. With the extension of facilities for the manufacture of Bamboo pulp the need for imported pulp will eventually disappear. The latter has undoubtedly been of service to the Indian Industry during the period of recovery and reconstruction, and although it has had to be imported it is obviously much better for India to import forty lakhs worth of pulp than to have to bring in extra imports of paper to the tune of nearly Rs. 2 crores annually. Other objections to the protective tariff rest on general principles represented by broad statements such as that “the consumer pays”. In the case of our industry we would invite the Tariff Board to examine the position *vis-à-vis* the consumer, who in 1929-30 bought his supplies of Writing paper and Printing other than news at prices (with duty added in the case of imports) so far below those ruling at the time of the original Tariff Enquiry that the savings amounted to nearly Rs. 40 lakhs on the production of the Indian mills *plus* the imports of these two qualities only. Our claim is that our interests are those of the Indian user of our product and *vice versa* and that if “the consumer pays” in the first instance, he in the long run must benefit.

A point specially referred to in the Government Resolution of 26th March is that in the application of the principle of protection regard must be had to the financial needs of the country and to the present dependence of the Government of India on import duties for a large part of its revenues. In this connection we note from the published accounts of Sea Borne Trade that the total duty collected on paper, pasteboard and stationery exclusive of Government Stores has increased from Rs. 60,90,885 in 1923-24 to Rs. 89,04,404 in 1929-30. Thus the existing tariff has not prevented a large expansion in the Import Revenue and there is every reason to anticipate that revenues from duties on imported paper will not suffer from a continuance or extension of the protective duties.

Turning now to the questions of the need for a further protective tariff and of the nature and extent of the protection required, we have to say in the first place that the present outlook for any scheme for the manufacture of Bamboo pulp is by no means favourable in face of current extremely low prices of wood pulp. These low prices have been brought about by the world-wide depression in trade, following a period of great expansion of manufacturing facilities in Sweden and in North America. Revival in trade and increasing demand will undoubtedly bridge the gap between abnormally low demand and excessive production capacity, but we have to reckon with the likelihood of a continuance of present low rates (especially for pulp) over a period of years. In such circumstances it is likely to be extremely difficult to attract capital to a pulp mill scheme of any description, however promising its prospects, unless the Government of India shows decided determination to give effective support of the local pulp and paper industry. Were protection removed at present the result would be intensified competition and an entire disappearance of the conditions required to enable the Mills to carry on their ordinary business successfully and at the same time prosecute plans for the development of bamboo. Much evidence can be submitted as to the nature of market competition at present and in regard to the need for a continuance of the tariff for some time to come.

With regard to the amount of Protection required, we would definitely apply for a protective tariff for a period of ten years at the rate of Rs. 140 per ton (or 20 per cent. *ad valorem* whichever is higher) upon all descriptions of paper except such as may be specially or temporarily exempted in accordance with such recommendations as the Tariff Board may make. The protective duty on White Printings and Writings might suitably be made subject to a surcharge in the shape of a percentage on the duty based on the market price of easy bleaching wood pulp at the beginning of each calendar year. If permitted we would venture at a later date to submit details of a suggested scheme. We suggest moreover that, as in the case of the Steel Industry, the time has now arrived when measures should be taken to ensure the effectiveness of a Protective Tariff by empowering the Executive to alter the rates, and if the period of the Tariff were fixed for ten years or over, the Executive might also reasonably be empowered to effect an abatement of the surcharge or duty in the event of the price of wood pulp rising over a stated figure. In order also that protection may be regulated we would recommend that the Executive should also be given power to transfer any descriptions of paper from the exempted list to the protected list.

In asking for a protective duty upon all classes of paper, subject only to certain clearly defined exemptions, we suggest that the results of the preliminary experimental period of Protection now justify the removal of limitations and that the development of the local industry on the broadest lines should be the end held in view. Certain descriptions of paper may have, for special reasons, to be admitted into the country free of Protective duty, but we claim that the most careful discrimination is required as to the nature of the paper so exempted. For example we should not wish to cause interference with the supply of cheap mechanical Newsprint. This was the intention of the arrangement in August 1924 whereby we agreed that mechanical Newsprint should be exempted from Protective duty "at any rate until such time as we can see what effect such differentiating may have on the paper trade generally". Newsprint imports have increased by 40 per cent. in six years reaching a total of 24,322 tons in 1929-30, and it is clear that there has been no interference with supplies. Unfortunately however, in the same year about 8,000 tons of other papers which are not Newsprint have also been admitted free of the protective duty owing to the nature of the criterion adopted for determining liability to protective duty. We would like to be allowed to submit a memorandum dealing specifically with this subject and as far as possible embodying suggestions to remedy the present situation whereby the mills are deprived of the full benefit of the protection intended to be given. The manufacture, in India, of certain other papers,

now admitted free of protective duty, might suitably be encouraged by means of Protection. For instance, our experiments with Bamboo point to it as eminently suitable for the manufacture of Kraft paper and Manilla while poster paper might also be made in this country seeing that machines are now available for the manufacture in India of M. G. papers.

We shall be very pleased to amplify any of the foregoing statements and to furnish to the best of our ability any explanations or evidence that may be required.

Copy.

Enclosure.

No. 209—30/2, dated the 9th July 1930.

To

The Joint Secretary to Government,
Commerce Department,
Government of India.
Simla.

Bamboo Paper Industry (Protection) Act, 1925.

DEAR SIR,

We have the honour to acknowledge receipt of your letter No. 202-7 (26), dated the 19th May, in which are embodied a number of statements made by paper importing firms criticising and attacking the Indian Paper Mills for their policy of using comparatively large quantities of imported wood pulp since the Protective Tariff Act came into operation.

Your letter also gives us to understand that Government requires to know whether and to what extent the objects of Protective Legislation are being achieved and we thoroughly welcome the fullest enquiry into our working and our progress in regard to the development of Bamboo pulp and paper-making.

First, with regard to the statements and figures quoted in your letter, we agree that there has been a large increase both in pulp imports and in paper production since the Tariff was imposed, but we submit that the conclusions sought to be drawn from the statistics are entirely incorrect.

Before dealing with the main aspect of the question, it may be pointed out that the calculations quoted in paragraph 3 of your letter are incorrect inasmuch as they omit to take into consideration the fact that one ton of wood pulp does not, and cannot, suffice to make one ton of paper. Wastage occurs in the mere importation and handling and storing of the pulp as well as in the processes of bleaching and manufacturing into paper. If you allow say 20 per cent. to cover all losses between the pulp importing steamer and the paper export department of the mill, then obviously an increase of 10,500 tons in wood pulp imports would represent an increase of no more than 8,400 tons of paper produced and as the paper produced increases by 9,504 tons it is clear that 1,000 tons more—rather than less—“genuine Indian paper” has been manufactured. Therefore it cannot be true that less indigenous material has been used and less labour employed to collect it.

So far as concerns our own importations of wood pulp the figures submitted with this letter show that our consumption of indigenous materials has not decreased, but on the contrary has increased to an extent even

slightly greater than the increased consumption of woodpulp. This has occurred in spite of the fact that we have laboured under considerable disadvantages having had to undertake a great deal of reconstructive work at the mills including the rearrangement of the entire digesting and pulp preparing plant at our No. 2 Mill. Incidentally such an alteration could not have been accomplished without grave interference with working and without considerable loss had we not been able to resort to woodpulp during the time the pulp-making plant was out of commission and although we have not quite finished what we have to do in this connection—at both Mills—we are already making a considerable portion of our pulp requirements from bamboo and are correspondingly reducing the employment of imported pulp.

The reason for the large imports of woodpulp, both by ourselves and by other grass mills, is to be found in the report of the Tariff Board. On page after page of this report the high working costs of the grass mills and their consequent inability to sell their output are attributed in large measure to the state of their plant and equipment much of which was obsolete and worn out. The effects of over-production during the war and of the subsequent destructive competition left our Mills exhausted and in a most unsatisfactory position in regard to efficiency. To quote from paragraph 28 of the Tariff Board Report—"the paper made in India from Sabai grass during the last five years has not been satisfactory and is inferior to the paper made by the same mills before the war", also, "the lost efficiency could not be recovered in two years or even three". Obviously in such conditions it was our first duty as paper-makers, and as potential users of bamboo pulp, to put our paper-making plant in order. More, it was a vital necessity because of the precarious condition of much of our plant. At any time a breakdown might have occurred to cause serious interruption in production and possibly disastrous results upon the commercial working of the company.

Wood pulp played an important part in assisting us over our difficulties. The Tariff enabled us to fill our order books at steadily decreasing prices, but the use of woodpulp, together with the increased consumption of indigenous materials, put us in a position to meet all demands and at the same time to take in hand important schemes of mill renovation. Incidentally owing to increased production and better working our costs were reduced and this was reflected in the reduced price of paper which is now fully ten per cent. below pre-tariff rates. At the same time, all our qualities of paper for Government and the general demand have been substantially improved as regards shade, strength and finish, and now compare favourably with imported papers at the same price.

It is unnecessary here to set out in detail all that we have done in the way of mill renovation. Large sums have been expended in the demolition and reconstruction of buildings, the provision of modern equipment at both Mills and the installation of new steam and power plant. The most important part of the work was the construction of an entirely new pulp preparing plant for Bamboo at No. 2 Mill (Kankinara) with digesters specially arranged for working to the new process which has been developed. The point we wish to emphasize in this connection is that all this work takes time and money. In the first place, lack of means was a severe handicap. In spite of the cash contribution of Rs. 30 lacs by the Managing Agents, the Company was still heavily in debt when the Tariff was brought into force, and it was not until some time later that we could face the outlay of large sums in new plant and equipment. In August 1926 we arranged for one of the most prominent and successful paper-makers in Great Britain to come out to advise us and we engaged expert staff to assist in carrying out whatever plans should be adopted, but unfortunately at the last moment, our consultant was unable to come to India. Meantime plans were elaborated and eventually a very well-known Paper Mill Engineer from Edinburgh was induced to visit India on our behalf in the cold weather of 1927-28 to study conditions on the spot. Under his advice definite decisions were reached and a comprehensive programme laid down for schemes of mill reconstruction

in progressive stages. After this position had been attained we still had to place orders for plant, etc., and arrange for the demolition and reconstruction of buildings, etc., in such a way as to cause the minimum amount of interference with the production of paper. We have been fully engaged on this during the past two and a half years, and although progress has not been so rapid as we ourselves hoped, there has been a continuous and steady advance upon sound lines. At the moment the first stage of the work at No. 2 Mill is practically completed. At No. 1 Mill we are completing an extension to our new beating Mill and already have our new pulp preparing and bleaching plant in operation in readiness for the next stage—the installation of new digesters in an up-to-date and well equipped and arranged digester house.

Throughout the whole of this work the urgent necessity of making progress with Bamboo has been kept well before us as our principal ultimate aim. We realise, perhaps more keenly than those not actually engaged in the business, how essential it is to base the Indian Paper and pulp industry upon the staple material which is the only one available locally in sufficient quantity. To attain this end we have devoted no small amount of energy and expenditure which is not by any means reflected in the actual figures of bamboo used or of pulp produced hitherto. These figures are given in the statements accompanying this letter, but they are no criterion of the work actually done nor do they indicate the results accomplished.

We would recall that we began our experiments in bamboo digestion very many years ago. In the years 1911 to 1914 a number of tests were made at No. 1 Mill on bamboo in different types of digesters with different digestion re-agents, etc. It was found that bamboo could be made into a suitable pulp although the bleach figure was much too high in most cases. During the war, although a revolving Digester was bought for Bamboo cooking in 1916, no experimental work was undertaken, but immediately the war was over, consignments of bamboo were sent to Sweden for test in plant of the same description as that which was then being ordered for the Burma Mill scheme. Experiments in Sweden gave fairly satisfactory results, but owing to various reasons unconnected with the method of digestion, the Burma Mill Project eventually fell through, after the plant had arrived at Rangoon. Subsequently part of the plant from Rangoon was erected at No. 1 Mill and tried out on Bamboo. The tests showed:—

1. That we could not make pulp economically with this plant by the Soda process.
2. That we could make bleachable pulp by the sulphate process but that the odour produced caused such objection on the part of residents outside the Mill that the process with this plant had to be abandoned.

Exhaustive tests were then carried out in our Research Laboratory and at Titaghur to discover the best method of dealing with bamboo fibre and eliminating the small difficulty of the sulphate process. In these tests we developed a new process of our own which, in our opinion, give better results than Mr. Raitt's fractional method whether applied to the Caustic Soda or to the Sulphate processes. It was then decided to lay down at No. 2 Mill a plant to digest bamboo by this new process leaving the other mill free to deal only with grass fibre. This plant was put into commission at the end of 1929, and is designed to deal with 12,000 to 14,000 tons of Bamboo per annum on the new process. The arrangement permits of substantial extension to meet requirements.

Actual working upon a commercial scale with the new plant enables us to claim for the new process that it solves the problem of the chemical treatment of Bamboo in the most economical and efficient manner and this moreover without regard to the species of bamboo used. We are now able to digest half a dozen different species of bamboo equally well. If we have not yet obtained full output from our new plant this is mainly due to the

difficulties we have encountered in regard to the preliminary mechanical treatment of the raw material which has to be crushed or chipped in such a way that the nodes are thoroughly opened up. We are now aiming at developing a machine capable of dealing effectively with all descriptions of bamboo ranging from the thin-walled bamboo of the Muli (*Melocanna Bambusoides*) type with all thicknesses of about $\frac{1}{4}$ inch to the thick-walled type of bamboo such as *Arundinacea* which may be almost solid and up to six inches in diameter. Most of the difficulties have at last been surmounted, and when we get our new design of crusher we should be able to work up to full output. We are at present digesting between five and six hundred tons of bamboos monthly including four different species, and we hope within the next year to be digesting double this quantity when we have increased the capacity of the plant to the maximum.

It is not our intention to develop the manufacture of Bamboo pulp only at our Paper Mills, but we have as our ultimate aim the establishment in the near future of a separate Pulp Mill in the Cuttack area. Investigations begun by us some years ago resulted, on 11th October 1928, in the grant of a lease of the Angul Bamboo area (Cuttack) from the Government of Bihar and Orissa. The development of this area is now taking place and experience is being gained in the extraction and supply of bamboo therefrom on a large commercial scale. This is an essential preliminary to the erection of a mill in this area as there must be no question about the supply of raw materials. Provided Government can assure the industry of its continued support and of the continuance of the protective policy, the scheme for a new mill should very quickly come to fruition.

We trust that the foregoing information will satisfy Government that active and successful measures have been taken to promote the objects of the Tariff Bill. The statements enclosed herewith give the particulars asked for in your letter, and if any further information is wanted we shall supply it as we are only too pleased to welcome the fullest enquiry into every aspect of our working.

We may be permitted to make the comment that the representations made to Government by the paper-importing firms are not conceived in the interests of local industry nor for the promotion of the objects of the Tariff Bill.

With regard to the Tariff itself, it may be unnecessary at this stage to advance arguments for its retention, but it may be observed broadly—

1. that the Tariff has preserved the Indian Industry during a period of acute difficulty, has already resulted in a large increase of Indian produced paper (including the construction of a new mill) and before 1932 is likely to result in a very large increase of pulp manufactured from bamboo,
2. that, in spite of the imposition of the tariff, prices have not been raised to the consumer who is supplied with higher quality paper at rates very substantially *below* pre-tariff prices, and at the same time the revenues raised by the Tariff have been of great advantage to Government,
3. that if it is disadvantageous for India to import pulp—even temporarily—it cannot remedy matters to import paper instead, thereby not only sending money out of the country for paper which can be made here, but also depriving Indian Paper-makers of employment and strangling any prospect of a future bamboo pulp industry, which in its early stages must depend upon the existing paper mills for a market for its product, and which is in fact now making rapid strides.

We would respectfully submit that no case can be made out to justify interference with the policy of discriminating protection as applied to paper and adopted by the Legislative Assembly after the Tariff Board had submitted

conclusions based upon an exhaustive survey of the position and prospects of the industry.

We have the honour to be,

SIR,

Your most obedient servants,

For and on behalf of

THE TITAGHUR PAPER MILLS CO., LTD.,

F. W. Heilgers & Co.

(Sd.)

Managing Agents.

Enclosures.

STATEMENT No. 1.

Statement showing actual quantities of grass, bamboo and other indigenous fibres and of imported woodpulp used in the mills of the Titaghur Paper Mills Co., Ltd., during the five years from 1st April 1925 to 31st March 1930—also the quantities of paper produced during these years.

	Grass used. Tons.	Bamboo.	Other indigenous materials used. Tons.	Tons.	Total indigenous fibres used. % increase on 1st year.	WOODPULP.		PAPER PRODUCED.	
						Tons.	% in- crease on 1st year.	Tons.	% in- crease on 1st year.
1925-26 .	12,951	31	3,494	16,476	...	8,932	...	16,071	...
1926-27 .	15,917	149	3,073	19,139	16.16	9,089	1.76	17,119	6.52
1927-28 .	14,460	594	2,611	17,665	7.22	10,320	15.54	17,674	9.97
1928-29 .	14,186	1,139	2,305	17,633	7.02	12,222	36.63	18,980	18.11
1929-30 .	15,554	941	2,437	18,932	14.91	11,115	24.44	18,762	16.74
	73,068	2,854	18,923	89,845	...	51,678	...	88,606	...

Assuming, for comparative purposes only, that the figures for the year 1925-26 represent the normal, then the departure from normal during the subsequent four years may be stated as follows:—

	Normal for four years. Tons.	Actual in four years. Tons.	INCREASE.	
			Tons.	% above normal.
Indigenous fibres used	65,904	73,869	7,465	11.33
Woodpulp used	35,728	42,746	7,318	19.64
Paper made	64,284	72,535	8,251	12.83

The figures show:—

1. That the consumption of indigenous fibres has not decreased but has increased by 7,455 tons.
2. That while woodpulp consumption is nearly 20 per cent. above the figures of 1925-26, the increased consumption is 7,018 tons only and less than that of indigenous fibres.
3. That the maximum consumption of woodpulp occurred in the year 1928-29 and has since been reduced by over 1,000 tons although paper production has been maintained.

STATEMENT No. 2.

Statement showing the consumption of Material in paper at the Mills of the Titaghur Paper Mills Co., Ltd., during five years, 31st March 1930.

Materials.	YEARS.									
	1925-26.		1926-27.		1927-28.		1928-29.		1929-30.	
	PAPER MADE.									
	Tons.	%	Tons.	%	Tons.	%	Tons.	%	Tons.	%
Grass . . .	3,844	23.92	4,859	28.39	4,328	24.49	4,219	22.23	4,982	26.55
Bamboo . . .	9	...	45	...	178	...	842	..	263	...
Other local fibres	2,399	14.98	2,217	19.20	2,132	13.07	1,790	11.23	100	12.70
Total indigenous fibres.	6,252	38.90	7,121	41.59	6,639	37.56	6,351	33.46	7,385	39.25
Woodpulp . .	7,589	47.22	8,019	46.85	9,076	51.35	10,537	55.52	9,555	50.93
China Clay . .	2,230	13.88	1,979	11.56	1,959	11.09	2,092	11.02	1,842	9.82
	16,071	100.00	17,119	100.00	17,674	100.00	18,980	100.00	18,762	100.00

The figures show :—

1. That the paper made from grass in the last year (1929-30) was in greater proportion than in the first year (1925-26). Only in 1928-29 was the percentage below the 1925-26 figure.
2. That the quantity of clay in paper is now substantially reduced and in consequence the percentage of paper from woodpulp and clay, taken together, show a reduction. In other words, the extra small percentage of woodpulp paper has served to make up (but not fully) for the reduced consumption of China Clay.
3. Woodpulp paper has not taken the place of paper from indigenous fibres.
4. In the last year nearly 3,000 tons more paper was produced than in the first and of this roughly 1,000 tons was from grass and 2,000 tons from woodpulp.

(2) Letter No. C209-3/2, dated the 15/16th June, 1931, from the Titaghur Paper Mills Company, Limited, Calcutta.

With reference to your letter No. 258, dated the 13th May, 1931, we now have the honour to forward our replies together with annexures thereto and sets of samples called for in connection with Question No. 30.

One set of answers with enclosures is being forwarded by ordinary post to ensure quick delivery. Five spare sets are sent under registered cover.

In submitting our answers we have tried to make these as complete as possible, hence they are somewhat voluminous. Had time permitted we should have liked to have revised them more thoroughly but trust they are clear and free from error.

With regard to the point mentioned in paragraph 3 of your letter of 13th May we have supplied the fullest details of the cost figures asked for in Questions Nos. 47 to 49 inclusive, and have no objection to these details being given publicly along with all other information given in our various replies.

* * * * *

Enclosure.

PAPER ENQUIRY.

Questionnaire for Manufacturers.

1. (a) The Titaghur Paper Mills Co., Ltd., is a public limited liability company and is registered as such.

(b) The Company is registered under the Indian Companies Act with rupee capital.

(c) The following is a statement of the number of Indian Shareholders and the par value of their holdings of the different classes of shares:—

	No of Holders.	Percentage of total.	Value of holdings.	Percentage of total.
			Rs.	
Ordinary	246	66	2,44,950	56
Preference (Old Issue)	68	50	1,30,120	39
Preference (New Issue)	20	26	2,69,000	33
Deferred	106	93	91,135	28

NOTE.—The Preference Shareholders have no power to vote on any general matters except where they directly affect the Preference Shares.

The Deferred Shareholders have limited rights and may only vote on matters relating to the distribution of the Company's profits, when they are entitled to only one vote in respect of every three shares held.

At the time of the last enquiry it was estimated that approximately 70 per cent. of the capital of the Company was held by Indians. In putting forward our previous estimate we stated that it was difficult to ascertain exactly the proportion of capital held by Indians due to the common practice of holding scrip on blank transfer. The extent to which this practice prevails makes any estimate a matter of great uncertainty. On this account we prefer, in giving the above figures for the position to-day, to confine ourselves to the actual registrations in the share ledgers.

It is perhaps worthy of note that when this Company was floated in 1882 Indians figured prominently in the original list of shareholders and within three years from the flotation of the Company an Indian held one of the seats on the Directorate.

(d) Of the total Directorate of seven, four are Indians. At the time of the last Enquiry three of the seats on the Board were held by Indians.

The principal posts in the management of the Company are occupied by Europeans, but in the Mills and also in the office, Indians hold many of the senior posts. This matter is referred to more fully in our reply to your Question No. 22, where we also report on the changes which have taken place in the staff since the date of the last Enquiry.

2. Total capacity of our Mills as at present equipped is estimated as follows:—

(a) For the manufacture of 10,500 tons of Pulp per annum.

(b) For the manufacture of 20,800 tons of Paper per annum.

3. The quantities of pulp and paper produced in each year from 1st April, 1924, to 31st March, 1931, are detailed hereunder as follows:—

	Pulp.		Paper.	
	Wrapper.		Saleable Paper.	
	Tons.	Tons.	Tons.	Tons.
1924-25 . . .	7,635	586	14,970	15,556
1925-26 . . .	5,563	565	15,505	16,070
1926-27 . . .	6,843	347	16,771	17,118
1927-28 . . .	6,196	208	17,467	17,675
1928-29 . . .	6,086	50	18,930	18,980
1929-30 . . .	6,618	...	18,741	18,741
1930-31 . . .	8,751	...	19,260	19,260

Details of the above figures of pulp production are set out as follows:—

	Grass.	Bamboo.	Hemp Ropes.	Rags.	Total Pulp.
	Tons.	Tons.	Tons.	Tons.	Tons.
1924-25 . . .	7,047	1	267	320	7,635
1925-26 . . .	4,727	13	324	499	5,563
1926-27 . . .	6,054	59	321	409	6,843
1927-28 . . .	5,573	129	242	252	6,196
1928-29 . . .	5,357	326	224	179	6,086
1929-30 . . .	6,046	182	252	138	6,618
1930-31 . . .	6,005	2,180	430	136	8,751

4. The accompanying statement (Annexure A) enumerates the classes of paper manufactured in the last seven years giving details of the tonnage and percentage of total output represented by each.

5. Annexure B gives the particulars required.

6. From our experience we find that the quantities required are as follows:—

Description of Primary Material.	Quantity required to make one ton of	
	(a) Pulp.	(b) Paper.
	Tons.	Tons.
Grass	2.44	3.12
Bamboo	2.50	3.12
Rags—No. 1	1.11	1.176
Rags—No. 2	1.575	1.85
Hemp Ropes	1.416	1.67

In each case it is understood that the pulp is unbleached.

7. (1) *Grass*.—Since 1923-24 this Company has continued to obtain its requirements of Sabai grass from the areas mentioned at the last Enquiry,

viz., Sahebgunge, Nepal, the Western Circle of the United Provinces and Rewa. During the intervening period since 1923-24 there has been a reduction in the quantity of grass obtained from the Sahebgunge area but on the other hand the yield from the Western Circle forests of the United Provinces has increased. We estimate that the quantity of Sabai grass at present available in the areas which we have worked during recent years is as follows :—

	Lakhs maunds approximately.
Western Circle (United Provinces)	5
Nepal	3
Sahebgunge (Bihar and Orissa) and Eastern Circle (United Provinces)	2
	<hr/>
	10
	<hr/>

The question of the reduction in the grass obtained from the Sahebgunge area is a matter which has recently been investigated by the Deputy Commissioner of the Santhal Perganas, and it is anticipated that with the introduction of the scheme for reconditioning which he has prepared, the yield will show an improvement in future.

There are of course various other grass yielding areas in India, but as we have had no experience in working these, and as some of them are at present being worked by other Paper Mill Companies, the Board will no doubt receive estimates from the latter of the yielding capacities of such areas.

We find Sabai grass a very suitable raw material for the manufacture of many of our regular qualities, especially that quality of White printing paper which is so popular in the Indian bazar. The quantity available is ample for our requirements.

(2) *Bamboo*.—In 1928 this Company obtained a lease from the Government of Bihar and Orissa for the extraction of bamboos from their forests in the Angul division. Owing to the necessity of developing these areas, and also on account of the limited capacity of our mills for the consumption of bamboo, we have not as yet had an opportunity to test the ultimate yielding possibilities of these forests. By applying the figures given by Mr. Nicolson of the Forest Department in his original Report on the Angul areas, however, we estimate that the areas covered by our lease will yield from 25,000 to 30,000 tons of bamboos per annum. Should it be found ultimately that the areas are incapable of yielding this quantity, it is stipulated in the lease that Government will grant us further areas in the same division to enable us to obtain such an output.

There are undoubtedly numerous other bamboo areas capable of yielding vast quantities of bamboos. But while we would support the general conclusions of the Tariff Board as expressed in paragraph 112 of the 1925 Report, we should prefer not to attempt to estimate the quantities which may be available.

Bamboo has proved an eminently suitable fibre for manufacture into all classes of paper in common use.

(3) *Rags, Ropes, Waste Papers, etc.*—We have no reason to alter the statement made by us at the time of the last Enquiry in respect of these materials, *viz.*—“as regards rags and waste papers the limit on the east side of India has been reached both as regards quantity of supply and the cost”.

8. (1) *Grass*.—(a) As indicated in the answer given to Question No. 7 the quantity of Sabai grass available from Sahebgunge area has decreased in recent years. On the other hand the Company has experienced no difficulty in obtaining its full requirements of Sabai grass during the past six years.

The Company held a lease from the Government of the United Provinces for the right to extract grass from their Western Circle forests for 10 years from 1921 to 1931. Negotiations recently took place for the renewal of the lease for a further ten years but the Forest department concerned have decided, after having made a public call for tenders, to lease these grass areas to another party. The Company offered to pay the same sum annually as royalty as was payable under the lease granted in 1921, viz., Rs. 77,500, although in evidence in 1924, it was recorded that the Company considered the sum might reasonably be reduced.

(b) There has been no change in the method of collection and transportation of this material.

(c) The following is a statement of the royalties payable per annum in respect of the grass areas from which this Company obtains its supplies:—

	Rs.	A.	
Western Circle (United Provinces)	77,500	0	Government royalty.
Western Circle (United Provinces)	1,00,000	0	Salami. (Payments in respect of this area terminate at the end of the current season, i.e., 1930-31.)
Nepal	80,001	0	To Nepal Government. (During the season 1930-31 royalty has been levied at a rate per maund on actual quantities of grass extracted.)
Eastern Circle (United Provinces)---			
1925-1928	11,250	0	Government royalty.
1928-1934	7,250	0	Do.
Sahebgunge	0	1	Do.
			per md.

The royalties in respect of Nepal, Eastern Circle and Sahebgunge are paid by Contractors who supply the Mills from these areas.

(2) *Bamboo*.—(a) The principal source of the Company's supplies of bamboo is the Angul Forest division of Bihar and Orissa. At one time the Company obtained certain supplies from Assam and recently has made purchases of bamboos from local districts in Bengal.

(b) As the collection, extraction and transportation of bamboos to the mills from the Angul Forest division has only been taken in hand since 1923-24 we give below a short résumé of the methods employed.

The bamboos are cut by hand and extracted by manual labour or by bullocks to the nearest forest roads. They are then loaded on carts or motor-lorries for transport to the dépôt on the Mahanadi river, the average lead being 12 to 14 miles. It is necessary to cut the bamboos into short lengths when they have to be transported by motor-lorries. At the dépôt rafts are constructed and the bamboos floated from the forest areas to Cuttack, a distance of approximately 90 miles. At Cuttack another dépôt is maintained from which despatches are made to the mills as and when required.

Labour has been available for all sections of the work, but we have experienced a shortage of carters and in spite of recruiting this class of

workmen from neighbouring States, etc., we have found it necessary to employ a fleet of motor-lorries in order to transport the necessary quantity of bamboos within the working time available. During the season just completed, we have worked these forest areas to the extent of 8,000 tons.

As is only natural, when developing a new industry of this nature, a considerable amount of preliminary expenses have been incurred in the building of forest roads, the opening up of depôts, etc., but we consider that from now onwards with an increased outturn, we shall be able to show a reduction in the cost of delivering bamboos to our mills.

(c) The royalty payable to the Government for the right to cut and extract bamboos is as follows:—

	As.
On Salia bamboos	4 Per 100 bamboos.
On Daba bamboos	1 Do.

In accordance with the terms of the lease Government has the right to double these rates after a period of 15 years.

In addition the following minimum royalties are stipulated:—

	Rs.	
For the first three years . . . .	...	No minimum royalty.
For the fourth year	1,500	Minimum royalty.
For the fifth year	3,500	Do.
For the sixth year	5,500	Do.
For the seventh and all subsequent years	7,500	Do.

9. *Grass*.—Since 1924 the Company has not worked departmentally any of the grass areas, but has employed contractors to do this work by whom the grass has been delivered to the mills at certain rates per ton. The following is a statement of the actual cost to the mill inclusive of royalty:—

Season.	Western Circle.			Sahebgunge and Eastern Circle.			Nepal.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
1924-25	70	4	1	46	6	7	...		
1925-26	60	5	1	44	11	4	48	1	10
1926-27	58	7	7	44	11	4	44	11	4
1927-28 } Flat rate for all areas				51	15	2	...		
1928-29 }				51	6	0	...		
1929-30 }				55	5	8	...		
1930-31 }				49	6	3	...		

NOTE.—The royalty payable by the Company being more or less constant throughout the period, the nett rate per ton naturally varies in accordance with the quantity delivered in any one season.

Bamboo.—During the years 1926-27-28 the Company obtained supplies of Muli bamboos from several contractors in different districts in Assam. The average price paid during these years was approximately Rs. 37 per ton delivered into the Mills.

In 1928 the Company commenced operations on a very small scale in the Angul division, but due to the high preliminary expenses incurred in starting these areas and to the small quantity of bamboo extracted during the initial years, the actual all-in cost per ton worked at an excessively high figure. It has only been during the last year that these Angul areas have

been worked to any extent, and we give below details of our costs in respect of bamboos supplied to the mills for the year ended 31st March, 1931 :—

	Per ton.
	Rs. A.
(a) Cutting, carting and baling	11 5
(b) Railway freight	7 8
(c) Royalty	0 14
(d) Other charges—	
	Rs. A.
1. Rafting and floating	3 5
2. Handling charges at Cuttack depôt, transport to station and loading into wagons	6 2
3. Establishment, travelling, road-mak- ing, inspection, etc.	8 14
	<hr/> 18 5
	<hr/> 38 0

Certain quantities of bamboos have also been purchased from local sources in Bengal and these have been delivered into our mills at a relatively cheap price.

10. Generally Railway freights on coal, grass and other materials have remained constant during the past several years. In 1925 the Company obtained special freight rates for grass traffic from the various railways over which the material passes from the fields to the mills. These freight rates were later converted in 1928 into a wagon rate, and we consider them fair and reasonable.

When the Company commenced the transportation of bamboos from Cuttack to its mills a special rate was applied for and obtained although the rate granted is not so low as that granted on grass over a similar load. When the volume of this traffic has increased as is normally expected, the Company propose again to approach the Railway Company concerned for a reduction in the freight.

On the 1st February, 1931, the Eastern Bengal Railway increased the terminal charge on traffic over their Railway by two pies per maund, *vide* their Special Rate Circular No. 1 of 1931. On the 15th March, 1931, the terminal charge was reduced by one pie per maund, *vide* their Special Rate Circular No. 3, 1931. The result is that the charge now in force shows an increase over the rates obtaining before the 1st February 1931. This has increased not only the cost of our raw materials, but also the cost of delivering our paper. The matter was taken up to some length with the Railway Company concerned, but being unable to obtain relief letters were written to the Railway Board. We contend that such an increase was unjustifiable being contrary to the general trend of prices as shewn by index figures, etc., and places an extra burden on industries at a time when a reduction in freights might have been expected.

11. In view of the great importance of this question it is desirable to give a general résumé of our policy in connection with Bamboo before dealing in detail with the several special points mentioned in the question. Some information regarding our progress with Bamboo is embodied in our representation to the Board of date 27th April, 1931. More detained particulars are contained in our letter of 9th July, 1930, to the Government of India, a copy of which has been supplied to the Board.

An important point which calls for preliminary comment is the fact that the Tariff Board in 1925 declared and Government admitted that "fresh capital must be secured by the industry if the possibilities are to be fully

investigated". At the same time the Government decided that its assistance should be of a limited and tentative nature only so as not to encourage indiscriminate investment. This policy naturally did not facilitate the raising of fresh capital for the initiation of substantial improvements at the existing mills. Consequently the money for such improvements could not become available until the beneficial effect of the tariff had been unmistakably reflected in the commercial working of the mills. In the case of the Titaghur Paper Mills Co., Ltd., a financial reconstruction was carried out in 1925 with the aid of a cash contribution of thirty lakhs from the Managing Agents but it was not until early in 1928 that fresh capital was raised for necessary mill reconstruction and for the erection of a plant for the digestion of Bamboo upon a scale of full mill working.

The Report of the Tariff Board in 1925 contained many adverse criticisms upon the working, lay-out and equipment of our mills as well as upon the nature and quality of the paper produced. The Board was able to appreciate and acknowledge that the deficiencies of the mills were the result of War conditions wherein the mills had to use any makeshift arrangements to maintain and increase production in accordance with the requirements of the country. Nevertheless our capacity as paper manufacturers lay under reproach. So long as this was the case it could not be expected that the mills would be able to do justice to a new fibre. It could not have benefited ourselves nor have assisted the promotion of the bamboo pulp industry had we attempted the manufacture of Bamboo pulp on a mill scale before we saw our way to regain our lost efficiency and to be reasonably certain of putting a paper of good quality upon the market. Clearly as potential users of Bamboo pulp, it was our first duty, as paper-makers, to put our paper-making plant in order. But in doing so we have never lost sight of the fact that the protective tariff was given to enable us to investigate the possibilities of the manufacture of pulp and paper from Bamboo, and research and development work was maintained concurrently with effort designed to improve the paper-making efficiency.

Dealing first with the work on the paper-making side it may be said that after completing the improvements we had in hand at the time of the 1924 Tariff Enquiry we found ourselves still faced with very great difficulty owing to the fact that our main staple at both mills was Sabai grass, and that the arrangements we had then been able to adopt in regard to the treatment of pulp from this material did not give precisely the results at which we aimed. In these circumstances we had recourse to the assistance of Mr. William Wallace of Carrongrove Mills, Scotland. This gentleman is one of the most prominent and successful grass pulp and paper-makers in Great Britain. He had already assisted us materially with his advice and in August, 1926, we arranged with him to come to India to study the conditions at our Mills with a view to drawing up plans for a comprehensive scheme of rearrangement and replacement of plant, designed in such a way as to lend itself to the incorporation of features requisite for the treatment of Bamboo by the Soda process. We also engaged expert staff to assist in carrying out whatever plans should be recommended. Very unfortunately at the last moment, Mr. Wallace was unable to come to India but under his advice plans were elaborated both here and in Scotland in consultation with Mr. Frank Gray of Messrs. Jas. Bertram & Son, Ltd., the well-known paper-maker Engineers of Edinburgh. Eventually in the cold weather of 1927-28 Mr. Gray visited the Mills and with his assistance definite decisions were reached and a comprehensive programme formulated for schemes of Mill reconstruction in progressive stages as well as for improvement in existing plant and equipment.

Some particulars of the work accomplished are given in answer to Question No. 38 as well as in our notes regarding point (f) of the question now under reply and it is unnecessary to detail them here. But one point we wish to emphasize is that work of this description takes a long time even when questions of finance can be overcome. The great difficulty has been to effect the necessary alterations without interfering with the productive capacity

of the Mills or adversely affecting the quality of the paper produced. Many old buildings had to be gutted out and entirely reconstructed. Consequently to keep old plant at work until new plant was installed necessitated the adoption of numerous makeshift arrangements and militated against the speedy completion of the work.

As stated in our letter of 9th July, 1930, to Government, wood pulp played an important part in assisting us over our difficulties. It enabled us to maintain and to increase output while taking in hand the necessary improvement work. It thus promoted the success of the Company's commercial working and thereby contributed very substantially to the advancement of our plans for the development of Bamboo. In our opinion therefore criticisms based upon the quantities of wood pulp imported and used in recent years are ill-conceived since they take no account of the circumstances of our mills. It is perhaps permissible for us to remark that a complaint that the import of wood pulp causes a "drain" upon India's finances comes with singularly little grace from those engaged in the import of paper. Were India obliged to import her requirements of paper the drain would increase five-fold and in addition India's industrial organism would suffer definite injury.

Looking now at the progress made in matters more directly associated with the development of Bamboo, we believe we have made a notable advance in regard to the chemical treatment of Bamboo. We deal with this matter in more detail in another section of this answer where we describe the equipment which the Kankinara Mill now possesses for the manufacture of Bamboo pulp. Before this lay-out was finally decided upon we carried out a great many experiments at Titaghur in the ordinary Sinclair Digesters, also in a special plant erected at the Mill for experimental purposes. The latter comprised part of the Boving Digester equipment supplied some years earlier from Sweden for the abortive Burma Bamboo Mill scheme. This plant was designed for the treatment of Bamboo on the "overhead" system and would require modification for reasonably economical working in the "fractional" or in the closed cycle system of digestion. What we have accomplished on the chemical side as the result of these experiments and of the research work carried out in the laboratory is mentioned later. On the practical or mechanical side the experiments at the mills were naturally of the greatest value. One of the thorny points of the Bamboo problem is with regard to the most effective method of mechanically treating the raw bamboo prior to digestion. It will be remembered that Mr. Raitt in 1912 pronounced definitely in favour of crushing bamboo rather than 'chipping' it in accordance with the usual mill practice as applied to coniferous wood. He then said that "the only drawback to crushing is the increase in mass which it entails". In our earlier experiments with bamboo, about the same time, we considered this objection so weighty that we decided in favour of chipping especially as our experience of a crusher (the same as supplied to the French Mill at Tonquin, Indo-China) proved that it was unsuitable for the classes of Bamboo we were then using. Consequently for our Burma Bamboo plant we had ordered two heavy chippers of the usual Swedish type for wood but with special appliances designed to facilitate the more effective treatment of Bamboo. These proved satisfactory up to a point and both at Titaghur and subsequently at Kankinara numerous repeated attempts were made to ascertain whether by any alteration or adjustment the requisite results could be obtained from them. These experiments were continued long after we had provided ourselves with a heavy bamboo crusher designed according to our own ideas for the treatment of all classes of Bamboo. The best that can be said of the chippers is that they can be employed as supplementary to, or as a stand-by to, a crushing plant but that, if employed, the pulp produced will not be entirely free from 'shieve'—a defect which cannot be tolerated in a high class paper.

Experience with these chippers led to the construction of a very heavy type of Crusher consisting originally of three and latterly of four sets of rolls of different surface characteristics. We were of course aware of the

features of the machine in use at Naihati but our object was to secure a crusher which would satisfactorily deal with each and every kind of Bamboo and to attain that end we have spared neither time nor trouble in the carrying out of one alteration after another and in experiment with several types and arrangements of rolls. We have now before us plans for another crusher which will embody certain improvements which we have found to be essential and is expected to be a more efficient machine than the existing one, but before putting this in hand for manufacture we await results of yet another machine designed in Glasgow for our friends at Raneegunge. Should the machine now being installed at the Bengal Paper Mills come up to our requirements in practical working it may prove the solution of our problem. On trials in Glasgow it appears to have dealt quite satisfactorily with samples of different types of Bamboo which we shipped Home for experimental purposes but it will be appreciated that a week or two of steady working under mill conditions may give results very different from those obtained on a trial run in the maker's workshop.

In dwelling upon this question of the mechanical treatment of the raw bamboo we merely wish to indicate an aspect of our work which has taken up a considerable amount of time. The difficulty is not insuperable and we are confident of overcoming it. It might be circumvented by so designing the washing and straining plant so as to eliminate shieve after digestion and bleaching, but this would not be the most economical way of dealing with the difficulty. The proper course is to open up the bamboo sufficiently to prevent the occurrence of shieve thereby at the same time reducing the amount of chemical required for digesting and bleaching as well as simplifying the subsequent processes.

The question of the size and type of digester suitable for Bamboo is one that of course depends mainly upon the cooking process adopted. For our mill experiments—as distinct from those in the laboratory—we have used the ordinary Sinclair 'grass' digester, the Swedish type as used in wood pulp mills and the revolving type of Horizontal digester. It is impossible for anyone to dogmatize on the question and we would not in the meantime hazard an opinion as to the most suitable digester for our process, but we hope that the new plant now on order will eventually prove helpful as a guide to the settlement of this problem as well as in bringing about an improvement in production and economy in manufacture.

It is not only in the mills that we have had to spend considerable time and trouble in connection with the developing of bamboo, much has also been done in the forests. As already mentioned briefly in our reply to Question No. 8, the process of cutting, extracting and transporting bamboos has been carried out successfully, and any difficulties which have been encountered have been overcome. We have, however, in addition taken some pains to obtain definite confirmation as to the sustained annual yield of bamboo available under safe working conditions in the area leased to us. It will take several years to form our conclusions because of the system of four years' rotation under which we are working, but much has been done in demarcating plots where different methods of felling have been employed. We attach the utmost importance to this subject as we have in mind the probability of building a pulp factory at Cuttack or at some suitable site in that neighbourhood. For such a project with a capacity of say 10,000 tons of pulp per annum there must be no doubt whatever regarding the quantity of raw bamboos regularly available within easy distance of the proposed mill. In this connection we would mention that we have recently completed an inspection of the bamboo areas in several of the Orissa Feudatory States in the near proximity of our present areas, all of which are capable of supplying bamboos conveniently to Cuttack.

In other respects also much pioneer work has been done, *viz.*, in road building and depôt construction, with the necessary sheds for stacking the bamboos, quarters for staff, labour, etc. All such work has added considerably to the cost of working the areas during these initial years and although it is difficult to estimate what savings can be made on past costs we give in

answer to section (b) of this question a price at which we consider it should be possible to deliver bamboos to our mills within the next year or two. Costs depend upon methods and means of extraction. These have to be very carefully organized and worked up in such a way as to avoid, as far as possible, undue disturbance of economic conditions in the forest areas and this matter has had our closest attention in its various aspects.

As stated in our letter to the Board, dated 27th April 1931 our policy is in the first instance aimed at the development of the manufacture of Bamboo Pulp and Paper at our existing mills. Obviously this is the safest as well as possibly the speediest means of proving the possibilities, overcoming difficulties and solving problems whether in relation to mill design and practice or in regard to Forest working. It must be obvious to the Board that precipitate action in regard to the design, erection and situation of the projected Pulp Mill might have unfortunate consequences and that it is of the utmost importance to pave the way for the future project in the manner we have adopted.

Much has been accomplished and we feel confident that an examination of the progress already made will fully justify a recommendation for a further grant of fiscal protection.

(a) As the Tariff Board is doubtless aware this Company has for many years actively interested itself in the development of Bamboo pulp for papermaking, and when the present protective tariff was introduced further research work was immediately undertaken, in order to determine the possibility of manufacturing bamboo pulp economically. Our former enquiries had led us to adopt the view adopted by Mr. Raitt (in his report published in Indian Forest Records 1912) that the alkaline treatment of bamboo was likely to give the best results. Moreover the possibilities of the sulphite (or acid) process have already been developed in this country by the India Paper Pulp Co. Hence our exploratory work has been almost entirely confined to the development of the soda process. In this connection we take the opportunity of acknowledging our indebtedness to the pioneer work of Mr. Raitt and his colleagues at Dehra Dun in the chemical treatment of bamboo.

As a result of exhaustive tests both in the laboratory and on a mill scale at Titaghur we came to the conclusion that, while the fractional process developed by Mr. Raitt, represented a very distinctive advance in alkali digestion processes especially as applied to bamboo, we could, by the application of the counterflow principle, in a closed cycle system of digestion, obtain a still better pulp with reduced steam and chemical costs. The outcome of our experiments was the Cascade process now in use at Kankinara.

This process has proved suitable for the treatment of many different types of Indian bamboo and the resultant pulp possesses qualities which render it suitable for the highest grades of Indian Mill made paper either alone or in conjunction with grass or other fibres. We find that bamboo pulp of our own manufacture is superior for most of our purposes to the ordinary qualities of easy bleaching sulphite wood pulp which we are in the habit of importing. It is cleaner, free from resins, and bleaches to a high white colour. We use it in all the superior qualities of paper made at Kankinara.

Our bamboo pulpmaking plant is not yet adequate to supply the full demands of the papermaking machines and we are therefore obliged to use a considerable percentage of imported woodpulp as well as a proportion of other materials in our various 'furnishes'. Hence in the meantime the bamboo pulp produced is rarely a sole ingredient of the paper made, although upon occasions it has represented a very high percentage—up to 100 per cent.—of the fibre content of certain makes of paper.

We have however been able to satisfy ourselves that the material can be used to advantage in all the better class paper and that paper made from it is acceptable to the market. In other words bamboo paper made from our bamboo pulp is a commercial success both from the manufacturing,

or technical standpoint and from the marketing point of view. Looking at the matter from the purely economic view-point it has to be admitted that a good deal remains to be done in the way of reducing costs. The statement accompanying reply to Question No. 48 shows that the cost per ton of bamboo pulp during the half year ended 31st March, 1931, amounted to Rs. 204, a figure which is certainly high but compares not unfavourably with the cost of grass pulp as produced during the same period by old grass digesters at Titaghur.

This is not unsatisfactory when it is remembered that the existing pulpmaking plant at Kankinara has been in operation for little over a year. Moreover many mechanical difficulties cropped up which greatly interfered with regular working and caused much additional expense.

Our previous remarks regarding the mechanical treatment prior to digestion illustrate one of the difficulties encountered. Alterations, experiments, and mechanical troubles in this part of the plant greatly interfered with regularity and quantity of output. Other troubles were experienced in the digester house arising out of the circumstance that in the fractional, or in the closed cycle system, hot caustic liquor has to be transferred with steam under pressure from one vessel to another. This puts demands upon the piping and cocks and valves employed, of a more severe nature than called for in working on the overhead system and although we had anticipated this and had gone to considerable expense in providing special cocks and valves the losses and delays due to leakage have caused much interference with output and economical working. Samples of a recently invented type of valve have been tried out and appear to meet requirements at a reasonably low cost and with the use of cast steel tees and bends in the piping ranges these troubles should be overcome.

It is obvious that as uninterrupted working develops and the scale of production increases there is bound to be an all round reduction in the cost of pulp manufacture. With these and other savings detailed in other sections of our answer we expect the cost of bamboo pulp made at Kankinara, will come down to Rs. 172-8 per ton. Should we be able to use sulphate the cost should come down to Rs. 162-8. In this connection please see the estimates given in reply to question No. 49.

In submitting the foregoing reply to this question we may add that we are not certain whether the Board would expect us, at this stage, to put forward estimates as to the economic possibilities of a new pulp mill at or near the forest areas.

We believe that from a separate pulp mill suitably situated in the vicinity of the Angul District we could manufacture and deliver unbleached bamboo pulp to our paper mills at a total all-in cost substantially below the figures attainable at Kankinara.

(b) Our supplies of bamboo are obtained partly from the portion of the Angul bamboo area (Cuttack) leased from the Government of Bihar and Orissa in October 1928 and partly from other areas in Bengal. Based upon deliveries during the working season of 1930-31 the average approximate total cost of 10,000 tons of bamboo delivered at Mill would work out at Rs. 32 per ton inclusive of all overheads, depreciation on transport lorries, and freight and all charges to Mill. This cost naturally includes a certain amount of expenditure which might be regarded as of an exceptional nature but which has been necessary for the opening up of the areas. As working develops the incidence of such items and of overheads would naturally be reduced, and we expect to get down to a working figure of Rs. 30. This would represent a saving of Rs. 8 per ton of bamboo on the present cost of supplies from our own leased areas (*vide* reply to Question No. 9).

(c) According to our experience the actual quantity of coal consumed is not always a reliable measure of the cost of "Power and Fuel". We are aware that the use of a high class coal usually means a reduction in the quantity required per ton of pulp and paper but the use of an inferior coal may be much more economical if the saving in price is such as more

than to compensate for the extra coal tonnage consumed. We found this to be the case in the tests mentioned in our answer to question No. 34.

For this reason therefore we do not attempt to answer question No. 11 (c) in the form in which it is put and prefer to look at the figures of cost per ton.

In the analysis statement furnished in reply to question No. 48 it will be seen that the cost of steam for process work and digestion of pulp and for the provision of power amounted during the past year to Rs. 22·543 per ton of bone dry pulp. When the monthly output of bamboo pulp attains the figure of 580 tons for which we are now budgetting we expect to see a reduction of fully ten per cent. in the cost of power and fuel provided of course that there is no increase in the price of coal. Indeed with certain steam and heat economies we have in view we believe the reduction in cost would not be less than Rs. 3 per ton of dry pulp.

(d) The present cost of chemicals is Rs. 62·36 per ton of pulp.

This is a relatively high figure due to several causes, *e.g.*—

- (1) Losses experienced through mechanical difficulties incidental to the experimental nature of the plant and methods of working it.
- (2) Low output.
- (3) Use of solid caustic soda to replace the alkali lost in process.
- (4) Inefficiency of old causticising plant.

At Kankinara, with the greater output expected from the new plant and after effecting improvements at the causticising plant, we expect to bring the chemical cost down by about Rs. 15.

Owing to the situation of the Mill in a very populous locality we have not been able to use Sulphate as a 'make-up' on account of the unpleasant odours usually associated with its use in a pulp mill. The use of Sulphate would reduce the cost of chemicals per ton of pulp still further. We estimate the further saving at about Rs. 10 per ton. The difficulty in regard to odour should not arise in the case of a new mill established at or in a Bamboo area. Even at our own Mills it may be overcome when working reaches a scale sufficiently large to justify the installation of a deodorising unit as is now successfully done in America.

(e) In answering questions Nos. 36 and 38 we comment upon the marked extent to which improvement in our manufacturing operations has been reflected in the better quality of our product. The alterations effected at our Mills enable us to produce—from bamboo, grass, woodpulp or other fibres—a paper which is vastly superior in almost every respect to that which we were manufacturing at the date of the last enquiry. The paper from bamboo satisfactorily meets market requirements and we feel certain that any improvement which may become necessary in the future can be met.

A feature of bamboo is its mellowness which renders it highly suitable for high class printing paper or for admixture with sabai grass which gives paper of a harder type. With these two materials we can produce a paper of varying qualities to suit the requirements of the different sections of the market. It is well known that a large class of consumers has a decided preference for paper made from sabai grass. On the other hand for certain purposes bamboo paper is more suitable. For example in the making of Imitation Art paper bamboo has been found particularly satisfactory.

Our experience with bamboo as a staple material for paper is of course not of very long standing and is small compared with our experience with grass, therefore so far as our mills are concerned the varied uses and application of bamboo in paper leave much room for further investigation. For example we have satisfied ourselves that bamboo can take the place of imported woodpulp in most classes of paper but there may be certain special papers for which bamboo alone would not be entirely suitable or most economical.

It hardly needs mention that there is no single fibre in the world which is equally suitable for all purposes and bamboo is no exception to this rule.

Questions of the kind indicated will naturally be solved in the course of practical working as time and opportunity offers. It is also very probable that special qualities of paper will be developed from bamboo as the paper-maker gains experience in the uses and virtues of the fibre.

In the meantime, it may safely be stated that bamboo pulp will make most of the qualities in general use equally as well as pulp from wood. It produces a very clean paper as it is free from the resins sometimes accompanying woodpulp.

(f) (i) Certain plant has been installed at Titaghur from time to time for experimental purposes, but this has been alluded to in our preliminary statement in answer to this question and need not be detailed here. The equipment introduced at Kankinara for the manufacture of bamboo pulp comprised the following:—

One bamboo crusher designed and manufactured in India.

Two Bamboo Chippers designed and manufactured in Sweden.

A re-arrangement of eight grass digesters of the Sinclair type together with liquor containers, piping, etc., in accordance with the requirements of the Cascade Process.

The Wallace Hydraulic Pulp Emptying system.

A washing and bleaching system consisting of seven large towers with pumps, piping, concentrators and chests.

Sandtables, strainers and concentrator for the bleached and washed pulps.

Completion of Kestner Soda Recovery Plant already paid for and partly erected some years ago.

In addition to the above items it was necessary to provide additional steam and power plant for working bamboo and we installed two large high pressure Lancashire steam boilers in place of two old low pressure boilers, also putting in a 600 K. W. Turbo Alternator and installing electric drive for the Digester, Bleaching and Straining Departments. The total cost of this work amounted to over Rs. 5½ lakhs without the cost of the Kestner Plant and without taking into account the value of old plant utilized or transferred from other departments, etc.

(ii) The new plant which it is now proposed to instal at No. 2 Mill consists of the following:—

Five large 4½ ton digesters of the Sinclair type but with modifications of design intended to overcome difficulties experienced with the ordinary type of Sinclair digesters.

One additional crushing plant with suitable conveyors also storage for crushed bamboo.

The digesters have been ordered. They are in course of manufacture in Scotland and will be shipped to this country very shortly. Meantime we are reconstructing a building for their reception and are preparing to effect necessary alterations in the existing lay-out.

Plans are under consideration for the rearrangements of the existing causticisers with additional plant including a Rotary Vacuum filter. The details of the proposed installation are at present being gone into with the help of our technical advisers at Home.

(g) As indicated in (f) above, the expenditure incurred on the installation at Kankinara amounts to over Rs. 5½ lakhs exclusive of the value of old plant utilized. The cost of the new installation is estimated at a sum of Rs. 3½ lakhs inclusive of building alterations and the construction of a new Bamboo Crushing and Chipping House with a new Crusher of improved design.

(h) The maximum capacity of the existing plant at No. 2 Mill is 840 tons of raw bamboo per month which would represent 336 tons of bamboo pulp

at say 40 per cent. yield. The new proposals are designed to bring the total consumption of bamboo up to 1,456 tons per month representing about 580 tons of pulp monthly or nearly 7,000 tons per annum. The new Digester house will be arranged in such a way that the new plant therein can be duplicated if necessary without extra expense for building construction.

(i) The total output of unbleached bamboo pulp for each year since 1923-24 has been as follows:—

	Tons.
1924-25	0-864
1925-26	13-095
1926-27	58-635
1927-28	128-642
1928-29	325-810
1929-30	181-817
1930-31	2,179-940

(j) In answer to question No. 7, it has been explained that the leased areas from which we draw our supplies of raw bamboo are expected to yield from 25,000 to 30,000 tons annually and that under the terms of our lease further areas will be allotted to us should this be necessary in order to furnish the requisite quantities. It was also mentioned that the mills are obtaining some of their supplies from other local sources in Bengal and this method of supply holds possibilities.

12. In the accompanying statement (Annexure C) the prices of the respective qualities of woodpulp purchased by us during the past seven years are shewn on a F.O.B. port of shipment basis. Actually we purchase our pulp on a C. and F. Calcutta basis, but allowance has been made for the sea freight in quoting the foregoing prices. The following further information is given which shows the further charges incurred on bringing the pulp to the mills:—

(a) In respect of pulp from Scandinavia, Finland, Germany and Portugal—

	Per ton. Rs. A.
(i) Freight, insurance, etc.	33 2
(ii) Landing charges	2 0
(iii) Transport charges to Mill	2 8
	<hr/> 37 10

(b) In respect of pulp from Czecho-Slovakia—

(i) Freight, insurance, etc.	28 1
(ii) Landing charges	2 0
(iii) Transport charges to Mill	2 8
	<hr/> 32 9

The port of importation in all cases is Calcutta.

13. With reference to the increase in the quantity of pulp imported as shown in the statement submitted in answer to question No. 12, the reasons for this increase were very fully set out in a letter, dated the 9th July, 1930, addressed by this Company to the Joint Secretary to Government, Commerce Department, Simla, a copy of which is in the hands of the Tariff Board. These reasons were also briefly alluded to in our preliminary statement in reply to question 11. For ready reference however, we quote an excerpt from the above letter which explains the conditions prevailing in our mills and shows why the increase in the importation of pulp was inevitable.

"So far as concerns our own importation of woodpulp the figures submitted with this letter show that our consumption of indigenous materials has not decreased, but on the contrary has increased to an extent even slightly greater than the increased consumption of woodpulp. This has occurred in spite of the fact that we have laboured under considerable disadvantages having had to undertake a great deal of reconstructive work at the mills including the re-arrangement of the entire digesting and pulp preparing plant at our No. 2 Mill. Incidentally such an alteration could not have been accomplished without grave interference with working and without considerable loss had we not been able to resort to woodpulp during the time the pulpmaking plant was out of commission and although we have not quite finished what we have to do in this connection—at both mills—we are already making a considerable portion of our pulp requirements from bamboo and are correspondingly reducing the employment of imported pulp.

"The reason for the large imports of woodpulp both by ourselves and by other grass mills, is to be found in the report of the Tariff Board. On page after page of this report the high working costs of the grass mills and their consequent inability to sell their output are attributed in large measure to the state of their plant and equipment much of which was obsolete and worn out. The effects of over-production during the war and of the subsequent destructive competition left our mills exhausted and in a most unsatisfactory position in regard to efficiency. To quote from para. 28 of the Tariff Board report 'the paper made in India from sabai grass during the last five years has not been satisfactory and is inferior to the paper made by the same mills before the war' also 'the lost efficiency could not be recovered in 2 years or even three'. Obviously in such conditions it was our first duty as papermakers, and as potential users of bamboo pulp, to put our papermaking plant in order. More, it was a vital necessity because of the precarious condition of much of our plant. At any time a breakdown might have occurred to cause serious interruption in production and possibly disastrous results upon the commercial working of the company."

Form No. III as submitted with this questionnaire (*vide* answer to question No. 19) shows the reduction which has taken place during the last two years in our consumption of imported pulp and the corresponding increase in the quantities of indigenous materials used. The installation of the new digesters will further increase the production of pulp from indigenous fibres which will be reflected in a corresponding reduction in the use of Imported pulp.

14. The answer to this question is in the affirmative. The minimum quantity we require at present in order to make up the deficiencies of our pulp producing capacity is 9,000 tons per annum. After the new plant is installed at No. 2 Mill this would be reduced by about 3,000 to 4,000 tons per annum, and when we have developed our pulp making plant, either by extensions planned for both mills or by the construction of a pulp mill, we should eventually need only a very small quantity of imported woodpulp, not more than about 100 tons per month at each mill.

The purpose for which woodpulp is at present required is chiefly to keep our papermaking plant fully employed. Eventually we shall only need the above-mentioned minimum quantity of one species or another of imported woodpulp for use in the manufacture of special papers and as a standby to assist production.

The following comments by our Mill Manager and Superintendent upon the technical possibilities of bamboo are of interest in connection with the question under reply:—

"A Paper Mill in India can be absolutely independent of imported woodpulp.

"It is possible to make from bamboo any grade of paper now being made in any of the Indian Mills from woodpulp.

"A mill working the two fibres, bamboo and sabai grass, to the extent of 80 per cent. and 20 per cent. respectively, could make any reasonable class of paper demanded of them.

"A mill producing paper from bamboo without the help of woodpulp or grass, could for special lines use waste Hemp ropes or waste rags as is done to-day. An entirely bamboo pulp paper mill would be capable of making all the classes of paper now being made entirely of woodpulp by any of the woodpulp Paper Mills in Great Britain.

"Indian mills are in a peculiar position in so much as they are called upon to make and do make practically any quality of paper. We handle qualities which the ordinary woodpulp paper mill in Great Britain will not attempt to make. In doing this we have to use a certain amount of Hemp ropes or white tailors cuttings as a help when extraordinary strength is required.

"When we say we will not require imported woodpulp we expect to be able to get other local fibres such as hemp rope for use in special lines the same as we do at present."

15. With certain minor fluctuations the price of woodpulp generally during the past seven years has shown a gradual reduction. This may be the natural result of the general fall which has taken place in world prices of most commodities. During the past year however the reduction has been much more marked and may be explained by the ultimate position arising from over-production on the part of the pulp mills and falling off of demands of the consumers. It is extremely difficult to endeavour to forecast the probable trend of prices of woodpulp during the next few years. Woodpulp prices have not returned to their pre-war level, but on the other hand it is a recognised fact that the supplies of materials in the timber producing countries are being consumed for pulp manufacture faster than they are being reproduced. We would also mention that an agreement has been come to by the majority of the European pulp producers to reduce their output by 15 per cent. In all the circumstances we doubt if during the next few years the price of woodpulp is likely to show any marked variation from its present day level. We quote for what it is worth, the statement of a well-known firm of agents for Scandinavian pulp mills which perhaps gives a fair view of the immediate position as seen by those interested as sellers of pulp. They write as follows:—

"The present prices for pulp, especially for sulphite pulp are below cost of production and prices will certainly rise somewhat as soon as the demand is in closer keeping with the supply. We certainly do not expect any startling rise in price."

Looking further ahead it would seem that the price situation must eventually be governed by the increasing disparity between the regeneration of supplies of material and the world demand for paper and paper products.

According to a compilation of official reports and estimates made for the Weekly Business Review of the American Pulp and Paper Association and published in the World's Paper Trade Review of date June 27th, 1930, the world's production of paper has increased as follows:—

- 1900—from about 5 million tons of 2,000 lbs.
- 1905—to about 8 million tons of 2,000 lbs.
- 1908—slightly above 9 million tons of 2,000 lbs.
- 1913—approaching 13 million tons of 2,000 lbs.
- 1920—about 14 million tons of 2,000 lbs.
- 1927—about 21 million tons of 2,000 lbs.

In twenty-seven years the output has thus quadrupled. By 1929 production of paper in the United States has further increased by nearly one million tons while both in Canada and in Northern Europe pulp production was half a million tons higher in 1929 than in 1927. The figures illustrate the

enormous growth in the world's requirements and since they show steady progress (except during the war period) they encourage the belief that the upward movement in consumption, interrupted for the present by general depression in trade, will be resumed when the depression passes away. In such case it would be reasonable to expect that increasing demand will eventually lead to a stiffening in the price of woodpulp.

16. Apart from the development of bamboo we have undertaken no fresh investigations into the possibilities in the manufacture of paper from other indigenous materials within recent years. In answering question No. 38 we show how the improvements in manufacturing operations have resulted in the production of a much better paper from sabai grass. This material has merits which ensure it a definite place in this country's markets similar in some respects to that employed by Esparto for certain descriptions of paper made in the United Kingdom. Moreover it is a material which can always be used to advantage to the extent to which it is available even if required only as supplementary to bamboo. It is unlikely if will ever be discarded by the paper-maker in India and in effectively demonstrating its merits in first class paper our mills are performing a service to the industry in general.

Particulars of cost of pulp made from this fibre are given in the statement accompanying the answer to question No. 48 while particulars of the output of pulp from grass and other fibres are given in answer to question No. 3.

17. The following statement shows the quantity of auxiliary materials required per ton of paper produced and their price per ton. In some instances the quantity used per ton of paper is so small as to be almost negligible and no quantity figure is entered against such items.

Description.	Quantity per ton of Paper.	Rate per ton.
	Tons.	Rs.
China clay	150	53.255
Alum	066	83.001
Rosin	029	323.122
Alkali	013	123.600
Lime	213	31.460
Salt	122	23.030
Sulphuric Acid . . . . .	...	323.710
Hydrochloric Acid	001	315.710
Starch	001	202.201
Glue . . . . .	...	821.905
Sulphur . . . . .	...	116.781
Sodium Sulphide	003	160.000
Caustic Soda	028	225.089
Silicate of Soda . . . . .	...	214.118
Bewoid Size . . . . .	...	336.875
Dyes	001	1,467.507

18. As compared with the position in 1924 an increase has taken place in the quantity of auxiliary raw materials available in India. In 1924 the company found it necessary to import a certain proportion of its requirements of China Clay as the quality of local supplies was not sufficiently high and regular to permit of use in certain classes of paper. During the intervening period we have kept in very close touch with our local supplies of this material, and they are now able to produce a quality of clay which we find suitable for all classes of paper manufactured by us. The result is that since early 1928 this company has not imported any China Clay.

In 1924 the company imported its full requirements of High Grade Sulphate of Alumina no supplies being available locally. We have during recent years been able to purchase from local suppliers a quality of Sulphate of Alumina suitable for our use. The suppliers however were not in a position to furnish us with our full requirements of this chemical, but during the past two years we have obtained more than half of our requirements from them, and we understand that in the course of a few months time they hope to be able to offer us a still larger quantity.

The Company has no difficulty in obtaining its full requirements of Acid, Rosin, Lime and other minor chemicals from local sources.

It manufactures its own requirements of bleach and all the soda required at No. 1 mill.

19. See end of Questionnaire.

20. (a) As has been mentioned previously in this evidence, the Company has obtained its full requirements of grass during the last 7 years and part of its requirements of bamboo from contractors who have delivered these materials into the mills at certain rates per ton. Consequently, we ourselves have no record as to the number of hands employed. However, we have obtained from our contractors their estimate of the labour employed by them and have also taken into account the labour employed by us direct in the working of our bamboo areas. The figures are as follows:—

	Rs.
In the collection, transportation and despatch of grass	13,000—16,000
In the collection, transportation and despatch of bamboos	2,500—3,000
Other raw materials—say	1,000

(b) The accompanying statement shows the number of hands employed at each mill during each of the past seven years and gives the comparative total wages bill.

	No. 1 Mill.	No. 2 Mill.	Both Mill.	Total Wages Paid.
1924-25	1,290	890	2,180	7,47,527
1925-26	1,516	1,001	2,517	6,85,147
1926-27	1,491	975	2,466	7,14,309
1927-28	1,577	1,117	2,694	7,04,901
1928-29	1,712	1,175	2,887	7,47,688
1929-30	1,593	1,207	2,800	7,49,430
1930-31	1,584	1,314	2,898	8,10,723

21. In answering this question we have again had to depend upon figures submitted by our contractors in respect of the sum paid as wages to the labour forces employed by them—

	Rs.
In the collection, transportation and despatch of grass	4,00,000—4,50,000
In the collection, transportation and despatch of bamboo	75,000—90,000
Other raw materials—say	3,000

So far as labour in the mills is concerned the statement given in answer to Question No. 2 shows the wages bill in each year.

22. At the last enquiry it was pointed out that mills had not so far been able to train Indians for the work of supervisors: In fact it was stated that there then existed no class of educated Indians suitably trained to occupy successfully the higher posts of management in the paper mills.

We have never lost sight of our obligation to Indianise in increasing ratio and our Directors, the majority of whom are Indians, are also very much alive to this obligation. Nevertheless force of circumstances has been against us. During recent years our main pre-occupation has been with schemes for renovations or with actual work of renovation on which we have been constantly employed. Needless to say this is not the class of work in which we can employ inexperienced young men for the purpose of training them.

In 1924, this company instituted an apprenticeship scheme, and since the inauguration of that scheme no less than 24 young men drawn from various parts of the country and with a certain amount of knowledge of science and engineering, have entered the mill as apprentices. The work of paper-making is often arduous and always makes considerable demands on the stamina and endurance of the people engaged, thus it is not surprising that many of these young men did not complete the apprenticeship period. At the present time the Company has 10 apprentices at their mills and, generally speaking, it may be said, they are making satisfactory progress in their studies and training, so much so that it is to be expected that certain men will be able to take the place of certain Europeans at present indentured to us on the completion of the latters' agreements.

It is not to be inferred from what we have written above that no progress has been made in the Indianization of the superior posts at our mills. The Chief Chemist of the Company, who is in charge of all operations at both mills, is an Indian. Indeed we are glad to state that Indians have proved themselves most apt and successful as paper mill chemists, and at the present moment the chemistry departments of both mills are in charge of Indians. At No. 2 Mill, the chief chemist permanently appointed is an Indian, and at No. 1 Mill, an Indian is acting as chemist in charge and will, we anticipate in due course, be confirmed.

In the Finishing Department of both mills Indians are engaged, and at Titaghur one of our apprentices, who has just completed his time, is acting as Chief Finisher in the absence of the European in charge of this department. At No. 2 Mill, the No. 2 Finisher whom we have just appointed, is also one of our apprentices and has just displaced an European.

Coming to the Engineers—our Electrical Engineers at both mills are Indians and three Indian Engineers have been employed at No. 2 Mill within the last two years. The Assistant Mechanical Engineer at No. 1 Mill is an Indian.

The doctors at both mills are Indians.

From the foregoing details it will be noticed that in all departments of the mills, except in the actual papermaking sections, Indians are increasingly occupying prominent posts. As regards the actual papermaking sections, we are not as yet confident that the apprentices are capable of displacing the European supervisors. It should be noted however, that of the 10 apprentices engaged, only one (now Chief Finisher at No. 1 Mill) has completed the indenture period of five years.

We may say however that certain of the apprentices display considerable promise, and at no distant date may be able to replace certain of our beater-men and machinemen from Europe.

While we are widely awake to the desirability of accelerating the rate of Indianization, we do not think it out of place to refer to the recently expressed views (*vide Statesman*, 5th May, 1931) of Sir Padamji Ginwalla with which we find ourselves in agreement.

Sir Padamji Ginwalla in effect said that while holding that Indianization should be quickened, there may be a danger of over-emphasis on this question resulting in young men taking for granted that their promotion to responsible positions is inevitable at an early date without special effort on their own part to fit themselves for these positions.

We have no doubt that the young men who are indentured to us realise, through coming in contact with the existing supervising staff, that most of the latter are picked men who have had many years of experience in Home mills

before reaching the standard demanded in their particular work. Papermaking being an art as well as a science the success of our operations depends very largely upon the human element and this is a factor that dare not be overlooked.

On the commercial side Indians are taking a place of increasing prominence in the selling organization. The Head Office has one Indian salesman on the superior establishment and three assistant salesmen. In Bombay there are two Indian Assistant Salesmen. In Madras one and in Rangoon one.

23. Certain housing accommodation is available for the labour at our mills, but this is limited. We have a scheme on hand however for the building of cooly lines at our No. 1 Mill, Titaghur, and a portion of a land in the bazaar has been purchased by the Company for this purpose. At our No. 2 Mill, Kankinara, there is no land available in the immediate vicinity of the mill. We should like to explain the position of our Indian labour as it is in a sense unique in that it has not been imported into the district on a large scale as is often the case when industries spring up. Years ago when the mills were first started the skilled Indian labour came to the district and brought with them a number of young men who were unskilled. At that time both Kankinara and Titaghur were comparatively small working centres, and what actually happened was that assistance was given to the original labour force of the paper mills to build houses in the bazaar in which they lived and in which was accommodated to a certain extent the unskilled labour. In this way our labour force grew up together in small groups and have worked together and are generally contented. We have, with us, especially in the papermaking departments, numerous workers who have been in the employment of the paper mills for a long time. Considering the age of the mills, the number of people we employ, and the number already on pension and whom we expect to recommend for pension in the near future, we think it speaks well for the conditions under which our people work. In both localities there has been installed a municipal water supply. This water is supplied from the different mills in the district in the ratio of the workers engaged in each. The supply at Kankinara is based on a population of 112,000 people at 10 gallons per head daily. Both municipalities have sewerage and town planning schemes, the former, which cost a considerable sum of money, was only made possible by donations from the different mills in the district. From the foregoing remarks it will be noticed that although we ourselves have no individual housing scheme nor sections of cooly lines, we are nevertheless indirectly meeting our responsibility—through the municipalities—for providing suitable conditions for the welfare of our labour. The labour is housed in towns which are progressing rapidly and which are spending considerable sums of money on beneficial services.

We have special housing accommodation for the apprentices at both mills.

As has been mentioned a pension scheme is in force whereby our labour are paid a pension on retirement on a certain scale in ratio to their wages, according to the number of years' service and the age of the worker.

A further scheme has also been introduced for the granting of maternity benefits.

Considerable improvements have been effected in the sanitation arrangements at both mills.

As a matter of course free medical attention is provided at both mills for all workers.

24. At the time of the last enquiry the Main Power Plant at Titaghur comprised two 1,500 K. W. Turbo Alternators (one of which was maintained as a stand by unit), three 20,000 lbs. Babcock boilers, two small Babcock and one small Stirling boiler. All main and auxiliary plant throughout the mill was driven by electric power.

At Kankinara there was no electric power save for lighting purposes. The main power unit consisted of a Vertical Triple Expansion Engine and the requirements for steam were supplied by four H. P. Lancashire Boilers and eight low pressure Lancashire Boilers.

The following is a description of subsequent extensions to and modernization of the steam raising equipment and power plant at both mills:—

Titaghur.—At Titaghur the steam generating plant includes three Babcock and Wilcox Boilers of the Standard W. I. F. Type, each having a heating surface of 5,397 sq. ft. and designed for a working steam pressure of 200 lbs. per sq. inch. These boilers were originally fitted with B. and W. Patent integral steam superheaters of sufficient heating surface to impart 150°F. of superheat to the steam generated, the evaporation from each boiler at normal load being 20,000 lbs. per hour.

In these boilers we found it necessary to burn high class Jherria Rubble coal and in order to obtain more economical working it was in the first place necessary to adapt them to the consumption of cheaper grades of coal.

Fuel is fed into the boilers by mechanical Chaingrate stokers designed to deal with low grade fuel conditions, each boiler being fed by a double stoker 6'x12' giving an active grate area of 144 sq. ft.

Although, as mentioned, these stokers were designed to deal with low grade fuels considerable trouble was experienced owing to the frequent collapse of the centre firebrick arches when using high volatile Raneeungga slack coal.

Some research and experimental work, necessarily of an expensive nature, was incurred before this defect was eliminated and the cheaper fuels consumed in a satisfactory manner.

When these boilers were installed they were arranged to work on a steam pressure not exceeding 150 lbs. per sq. inch. This was necessary in order to suit the requirements of the two 1500 K. W. Turbo alternators then in commission. When it was decided to instal a modern 2500 K. W. extraction type turbo alternator, it was necessary to raise the working steam pressure to that of the designed conditions, i.e., 200 lbs. per sq. inch—as a matter of fact an application was made to have the H. P. increased to 250 lbs. per sq. in., but without result. It was also necessary to increase the temperature of the steam superheat to 250°F. This compelled a complete replacement of the original superheater units by similar equipment of a larger capacity. Over and above this we installed a complete steam reducing and de-superheating equipment in order that steam of the proper temperature and pressure could, when necessary, be supplied to one of the old 1500 K. W. Turbo alternators (which was retained to be used as a stand by power unit) as well as to supply the engines driving the papermaking machines and for process steam in the digester department.

The object of the installation of the new and larger turbo-electric unit was to make more power available in the mill and effect economy in steam consumption by replacing an old unit having a high steam consumption with an up-to-date machine of higher efficiency designed so that part of the steam utilized in the production of power could subsequently be used in process work.

The new power unit was put in commission in December 1928 and is a most modern extraction type turbo alternator by the British Thomson-Houston Co., Ltd. The set has a normal rating of 2500 K. W. when supplied with steam at a gauge pressure (stop valve) of 190 lbs. per sq. in. superheated 250°F. (total temperature 638°F.) exhausting to a vacuum of 27.5 inches, and is capable of passing out 35,000 lbs. steam per hour at 30 lbs. gauge pressure at all loads from 1250 K. W. to 2500 K. W.

It may be noted here that the turbine extraction steam at 30 lbs. pressure is the most economical within the limits imposed by the present steam raising plant. But had a higher initial steam pressure been available it is most probable that a turbine would have been installed capable of being bled at two stages with say steam at 100 lbs. and 15 lbs. pressure available for a complete range of process steam requirements supplemented by an extensive use—as at present—of exhaust steam for heating purposes and the return of condensate for boiler feed use.

It is appreciated that the greatest economy in steam and power costs is to be found in utilising to the utmost a combined power and heating system applicable to the particular requirements of each individual manufactory. When one pressure range is suitable for power and another for heating the use of the two ranges, *in series*, with a common steam supply will effect economy corresponding to the extent to which it is possible to adjust the heating and power loads to occur simultaneously and correspond in relative intensity. A common steam supply will generate steam more economically and thereby reduce fuel costs.

The work undertaken at Titaghur in connection with the new turbine installation was accordingly planned to take advantage of the conditions obtainable and involved a complete new re-organization of high and low pressure steam mains in the boiler house, at the power plant and throughout the mill.

Kankinara.—At Kankinara considerable alterations have been effected at the steam generating plant. The four Lancashire boilers supplying steam to the Main Mill Engine at a working pressure of 160 lbs. per sq. in. have had a complete re-arrangement and renewal of steam piping together with the installation of new superheater units of sufficient heating surface to impart 100°F. of superheat to the steam generated.

Two modern Lancashire boilers of the John Thompson Dished type have been installed, each having a heating surface of 1,050 sq. ft. and a working pressure of 210 lbs. per sq. in. complete with superheater units of sufficient heating surface to impart 250°F. of superheat to the steam generated, together with economisers of a suitable capacity to deal with the flue gases from these boilers.

These latter 210 lbs. pressure boilers have been installed with the four 160 lbs. pressure boilers, by suitable reducing valves, to form a battery of six high pressure boilers on a common steam supply to power units consisting of:—

- (a) One 200 I. M. P. triple expansion condensing engine (Main Mill Engine) operating at 160 lbs. steam pressure with 100°F. superheat and exhausting to a 25-inch vacuum.
- (b) One modern 600 K. W. geared turbo alternator, by Escher Wyss & Co. operating at 200 lbs. steam pressure with 250°F. superheat and exhausting to a 27.5 in. vacuum. This is a new machine installed in 1929.

The remaining six low pressure Lancashire boilers have been interconnected to form a battery on a common steam supply at a pressure of 100 lbs. per sq. in. and to deal with the steam demand for Machines, Digesters, Soda Recovery, and other process work. This has involved a complete re-arrangement and renewal of steam piping.

In order to deal with the efficient combustion of low grade Raneegunge slack coal, the use of which has been determined by a very complete series of boiler evaporative tests, it was decided to instal an induced draught fan capable of dealing with the gases equivalent to a daily coal consumption in the region of 100 tons, based on Jherria steam coal.

It may be stated here that no less than fourteen different mixtures of steam and slack coal in various proportions and also slack coal only were used on the boiler evaporative tests referred to. The evaporative value of 1-lb. coal per lb. of water varied from 5.22 lbs. to 7.69 lbs. with a calorific value as fired of 10506 B. T. U. and 12052 B. T. U. the corresponding boiler efficiencies being 51.68 per cent. and 77.05 per cent. the prices ranging from Rs. 5 to Rs. 8.5-10 per ton delivered and referring to Raneegunge slack coal and Jherria steam coal respectively. The result in general reduced to the cost of evaporating 1,000 gallons actual of water varied from Rs. 6.6-6 to Rs. 3-11.7. With the higher efficiency of 77.05 per cent. the cost on the basis mentioned was Rs. 4-13.9 when using steam coal costing Rs. 8-5-10 per ton. On the other hand with slack at Rs. 5 per ton and average efficiency the cost of evaporation came down to Rs. 3-11.7 per 1,000 gallons. In other words the

cheaper coal was in every way more economical. It was therefore decided to use Raneegeunge slack coal only and this is present day practice in both mills, subject to a certain quantity of Jharia slack coal for stock purposes over extended periods.

The installation of the 600 K. W. Turbo alternator was determined by the following reasons:—

- (1) To provide for electrically driven preparatory plant for the increased production of bamboo pulp.
- (2) Conversion to the electrical drive of inefficient steam driven plant.
- (3) Reducing the load on the main engine by conversion of certain plant section to electrical drive.

(b) *Cost.*—On referring to Form II submitted in connection with Question No. 47 it will be seen that the cost of power and fuel was Rs. 47·482 per ton of paper in 1924. Owing to economies the fall in price of coal and to our being able to burn cheaper grades successfully the figure in 1929-30 fell to Rs. 20·577 per ton.

(c) The consumption of coal per ton of paper has been reduced at both mills. The figures for the half year ended 31st March 1931 are:—

	Tons.
No. 1 Mill	3·829 per ton of paper.
No. 2 Mill	4·196 per ton of paper.

25. According to statistics supplied by the Department of Commercial Intelligence and Statistics, the Indian Mills produced in 1929, 40,787 tons paper. We therefore estimate the present annual production at not less than 40,000 tons.

The total Indian demand is estimated by adding the figures of total imports to those of Indian Mill production. In 1929-30, the total imports amounted to 118,162 tons (*vide* Accounts of Sea-borne Trade of India for March, 1931). 1930-31, the total fell back to the level of the year 1928-29 owing to the general depression in trade and amounted to 99,270 tons. Of this total 74,035 tons (74·5 per cent.) represented packing paper, old newspapers and not protected newsprint. Packing paper (11,568 tons) includes Kraft paper which could be made in India and it is perhaps fair to set this off against special grades of paper included under the headings of 'other kinds' (3,487 tons) or paper 'manufactured' (1,052 tons) and to classify the imports as follows:—

Old Newspapers, Newsprint and papers not likely to be made in India	75 per cent. or 75,000 tons.
Papers made or likely to be made in India	25 per cent. or 25,000 tons.

On this basis our estimate of present total Indian demand would be:—

	Tons.
(a) Paper of all kinds	100,000 + 40,000 = 140,000
(b) Paper of the kinds made or likely to be manufactured in India	25,000 + 40,000 = 65,000

The imports of printings and writings include certain expensive qualities of high grade rag papers which will probably always find a market in India. On this account some deduction might have to be made from the total of 65,000 tons shewn as the total Indian demand for the qualities which can be made in India.

On the other hand the figures do not include Paste-board, Mill-board and Card-board the imports of which represented a value of Rs. 37,39,079 in

1929-30 and Rs. 26,93,867 in 1930-31. The tonnage imported in these two years was :—

	1929-30.	1930-31.
	Tons.	Tons.
Straw-boards	12,991	11,910
Other kinds	5,131	3,260
Manufactures of paste-board, etc.	745	253
Total	18,867	15,423

In reckoning up the total Indian demand some account has to be taken of these imports and of the fact that boards of various descriptions are actually manufactured in India.

For convenient reference we give herewith statistics* for the six years 1924-25 to 1929-30 showing tonnage and declared values of paper imported as shewn by the accounts of Seaborne Trade with average values calculated by ourselves from these published figures.

Another statement† gives the quantities and values of paper imported in 1930-31 and shows how the figures compare with those of the previous year.

Another statement‡ sets out particulars of the Production of Indian Mills (including Travancore) for the calendar years 1924 to 1929 inclusive. Figures of quantity and value up to 1927 appear in the Statistical Abstract for British India. For the figures for 1928 and 1929, we are indebted to the Department of Commercial Intelligence and Statistics. The "average value per ton" is calculated from the official figures.

26. The conclusions of the Tariff Board at the last enquiry regarding the possibilities of developing a market for Indian made pulp (a) in India and (b) abroad were based on a consideration of the relative costs (actual and prospective) of pulp made from wood and pulp made from bamboo.

As regards (a) they were of opinion that while a Bamboo Pulp Mill at Cuttack might supply the needs of the Titaghur and Bengal Mills an independent industry "would be left to cater for the needs of the Deccan Mill" only (*vide* paragraph 95 of the Report) and they expressed the view (paragraph 96) that the construction of Bamboo Pulp mills would not become profitable in India "until the export of pulp is something more than a hope for the future".

As regards (b) they declared (paragraph 93) that the prospects of developing a considerable export trade would be seen to be somewhat remote when it is remembered that years of effort will be necessary to get the cost of bamboo pulp down to Rs. 220 per ton "a figure which they adopted as the assumed price at which bamboo pulp could be shipped at Calcutta or Chittagong.

We give our views in regard to (a) as follows :—

Although our cost figures show definite progress towards the figure required to put bamboo pulp on competitive terms with woodpulp we are not yet able to base an argument thereon. Nevertheless we believe the construction of bamboo pulp mills in India is likely to become profitable for the supply of local needs, possibly some considerable time before the export of pulp becomes profitable. In support of this view we adduce the fact of the large expansion of the Indian market for paper. The statistics given in connection with our answer to Question No. 25 show that the combined figure of imports and paper locally manufactured increased from 99,752 tons in 1924-25 to 158,973 tons in 1929-30 and if we deduct from these figures the total quantities of packing, newsprint and old newspapers imported in each of these two years, we find that, without them, the market for other papers has increased by over 50 per cent. It is true that owing to depression in trade the import

* Annexure D (i) and (ii).

† Annexure D (iii).

‡ Annexure D (iv).

figures for 1930-31 show a shrinkage of over 20 per cent. This rate of shrinkage however does not apply to Indian mill production which has been fully maintained. We think there are many factors which would support an opinion that the 50 per cent. increase which took place between 1924-25 and 1929-30 is small compared to the increased demand to be anticipated within the next ten years. Should this prove to be the case there is likely to be an enormous local demand for bamboo pulp which will take precedence of any demand for the export trade.

With regard to (b) we are, as paper makers inclined to agree with the view expressed in paragraph 90 of the Tariff Board Report that "the development of an export trade in bamboo pulp may very well be left to look after itself in due season".

27. In 1925, the Tariff Board stated (*vide* Report, paragraph 98) that the proposal for a protective duty in imported paper pulp could not be supported. One of the considerations leading to this conclusion was the belief that it was unlikely "that a separate Bamboo Pulp Industry would come into existence for the grass mills would almost certainly make their own arrangements to supply themselves". This anticipation has to some extent already been justified.

Since we are of opinion--

- (1) that bamboo as a paper-making material has come to stay and
- (2) that the best means of fostering the development of bamboo is to protect and develop the *paper-making* industry which possesses the means for the conversion of pulp into paper and the organization for marketing the ultimate product

we would deprecate the introduction of a tariff on imported woodpulp. Such a tariff might possibly accelerate the development of bamboo but only if the protective tariff on paper were increased. It might not very injuriously affect mills, such as our own, where definite advances in the utilization of bamboo have been made and are in prospect but it is doubtful if a duty on pulp would be for the benefit of the industry as a whole while it would undoubtedly put foreign mills in a position of advantage if woodpulp were taxed without a corresponding additional duty on paper.

As we see the matter India must look to the development of a *paper* industry capable of meeting her own increasing needs, rather than to the creation of an export trade in pulp, and the development of bamboo should in our opinion be subordinated to the much more important work of building up a strong national paper industry.

28. Please see Annexure E.

29. We have selected the following stations as being fairly representative for the purposes you require. In the details of freight given in each case the port mentioned is the usual port of importation of paper for the particular market.

	Miles.
<i>Delhi—</i>	
Distance from Bombay—Bombay, Baroda and Central India Railway (imported paper).	842
Distance from Bombay—Great Indian Peninsula Railway (imported paper).	957
Distance from Titaghur—(Our paper)	894
	Pie per maund per mile.
Wagon freight from Bombay—Bombay, Baroda and Central India Railway.	·229
Wagon freight from Bombay—Great Indian Peninsula Railway.	·214
Wagon freight from Titaghur	·165

Lahore—

	Miles.
Distance from Karachi—(Imported paper) . . .	756
Distance from Titaghur—(Our paper) . . .	1,168
	Pie per maund per mile.
Wagon freight from Karachi	·235
Wagon freight from Titaghur	·211

Rawalpindi—

	Miles.
Distance from Karachi—(Imported paper) . . .	897
Distance from Titaghur—(Our paper) . . .	1,347
	Pie per maund per mile.
Wagon freight from Karachi	·235
Wagon freight from Titaghur	·211

Allahabad—

	Miles.
Distance from Calcutta—(Imported paper) . . .	512
Distance from Titaghur—(Our paper) . . .	504
	Pie per maund per mile.
Wagon freight from Calcutta	·377
Wagon freight from Titaghur	·175

30. Please see Annexure F (i) and (ii).

Samples submitted in connection with this question.

Two packets each containing seven books of samples of Titaghur Paper Mills and imported qualities. Each book has one sheet of each as follows :—

Titaghur Paper Mill Qualities.	Imported Qualities.
Ivory Finish White, 20×30—28 lbs.	Continental Ivory Finish White, 20×30—24 lbs.
White Printing, M. F., 20×30—28 lbs.	Austrian White Printing M. F., 20×30—26 lbs.
Elephant Cream Laid, 17×27—24 lbs.	Continental Cream Laid, 17×27—24 lbs.
Azure Laid, 17×27—28 lbs.	Dutch Azure Laid, 17×27—32 lbs.
Antique Laid, 20×30—28 lbs.	Continental Antique Laid, 20×30—33 lbs.
Antique Wove, 20×30—28 lbs.	British Antique Wove, 20×30—28 lbs.

The covers are made up of our Blue Cover, 20½×30½—60 lbs.

31. We attach a statement (Annexure G) showing the prices at which during the past six years, the products of our mills have been sold in the up-country centres, as well as the average prices realised at places in the vicinity of our mills. The prices given in the statement are those obtained net *ex-mill*.

Generally speaking, it is our aim to base our prices for the up-country centres on the prices for our Calcutta market with the addition of railway freight. Prices, however, have to be regulated according to competition from other ports, especially in places like Delhi and Lahore. Further, in several of the large cities up-country there are printers who are in a large way of business and are able to offer long runs of one kind of paper upon a scale such as no printer in Calcutta can reach. For such business it is customary to quote special low rates which are as profitable to the Mill as higher prices for shorter runs. Business of this description tends to lower the average up-country price. Another factor which has influenced a lower average price up-country is the fact that Calcutta—which is our best market—takes our best qualities whereas our sales up-country include a larger proportion of cheaper paper.

For these reasons it will be found that very often our up-country prices do not represent, taking the average, Calcutta prices *plus* freight. In 1929 and the early part of 1930, we had also to consider the competition offered by the Punjab Mills. Owing to their injudicious policy of entering the market at extremely low rates without attempting to co-operate with the existing mills in the regulation of price we also had to accept for a time lower prices. We have since been able to re-adjust the whole of our up-country prices so that to-day they are, generally speaking, quoted on the basis of Calcutta prices *plus* freight, except at those places where we begin to meet competition from the ports on the other side of India for which allowance has been made accordingly.

32. Our prices are generally fixed in relation to the price for imported paper, quality for quality, in the various markets where our paper is sold. Examples will nevertheless be found where foreign prices are either lower or higher than the prices quoted by our mills, but this is due to diversity of qualities in each particular line. Our own quality might be looked upon as an average quality as regards each kind of paper which we produce, and our prices are fixed accordingly.

33. We believe that the prices at which foreign producers are at present selling for export to India are unremunerative. In booking up business, foreign mills have shown a tendency lately to accept indents at almost any price, and in most cases very much below their quotations. Prices have come down so much within the last 12 months that it is impossible to conceive that mill costs can have kept pace with them. It is our opinion that most mills abroad must be manufacturing at a loss at least as far as their export orders to this country are concerned. We have gathered this from talks to representatives touring this country from time to time.

We quote hereunder extracts from two reports received from our Madras agents, which are of interest.

(1) From a letter written to us by the South Indian Export Co., Ltd., Madras, dated the 14th of November, 1930—

“A representative of the Dutch Mills is now in Madras and called upon us in connection with a suggestion that we should take on an agency for Bond papers, but no mention was made of Cream Laid. On enquiring as to how his mills were able to quote such low prices, he informed us that all the business which he booked now was at a loss of at least £1 per ton to the mills, but that if he did not secure such orders the mills would have to close down and the loss would be proportionately greater. If his statements are correct, it would appear that these imported prices are not likely to be maintained on the present level, but business has been booked and confirmed at the new rates.”

We can if required disclose the name of the mill concerned.

(2) A letter addressed to us by the South Indian Export Co., Ltd., Madras, dated the 5th of June, 1931—

“We received your telegram this morning, dated the 4th instant reading as follows:—

‘Tariff wire urgent current contract price c.i.f. Madras Unbleached items, Madras Government.’

As previously advised, the "Unbleached" items in the Madras Government Contract this year were awarded to Messrs. Advani & Co., Madras, who quoted As. 1-9 per lb. free delivery to Station Stores. We have had this price confirmed again by the Superintendent of Stationery this morning.

We do not know the exact c.i.f. sterling value but have calculated the price after the deduction of duty and charges as follows:—

	Rs. A.
Price free delivery Stationery Stores (Anna 1 per lb.)	245 0 per ton.
<i>Deduct—</i>	
(i) Duty (15 per cent. on Tariff value Rs. 256-10-8 per ton) @ As. 1-10 per lb. .	33 8
(ii) Clearing charges including cart hire to Storcs	6 0
	<hr/> 44 8
Contract price	245 0 per ton.
Less charges	44 8 ,,
	<hr/> 200 8 per ton c.i.f. Madras.
@1-5½ = £14-16-7 or say £14-16-6 (approximate).	

We accordingly telegraphed you as per confirmation copy attached that the Stores Delivery price was As. 1-9 as stated, and that the approximate c.i.f. sterling value per ton was £14-16-6.

The present duty paid is at the rate of 20 per cent. on the Tariff value but at the time of submission of tenders the duty was only 15 per cent., and the increase is for account of Government and is not included in the price. We have taken 1-5½ as the basis of exchange, as we imagine this must be approximately the figure which Messrs. Advani & Co. have themselves taken. With any rate much below this, they stipulated in their tender, the difference must be for account of Government, which has been agreed in the contract with them.

A shipment of 120 tons is on the sea and is due in Madras shortly. It may be possible to secure more accurate information as to the c.i.f. value after the arrival of the paper but we can make no promise to this.

It is evident that the Superintendent of Stationery considers that the especially low rate quoted is below the cost of production. As previously advised, the telegram of the Director General of Stores in London with prices for these items was received mutilated on the due date of the tenders, and it was only sometime after that a correct cable was received. The Superintendent therefore called for fresh tenders, both from Home and from local suppliers for these particular items.

When the tenders were first submitted there was no price below As. 2-2, but when called upon to tender again, Advani & Co. immediately reduced their price to As. 1-9 per lb. whereas the other importers were unable to reduce their prices by more than a pie.

The Superintendent considers that it is evident that the mills for whom Messrs. Advani & Co. were working, were determined to get the order at any cost, even well below the cost of production, in order to keep the mills going."

Incidentally, the particular paper referred to in the above letter offers an excellent example of the extent to which substitution has been carried by importers in order to evade the Protective Tariff.

In 1927 we discovered that this Unbleached Printing was being brought into Madras as "Wrapping Paper" by Messrs. Charles Morgan & Co. and was paying duty as such while the purpose to which the paper was actually being put by the Madras Government was for printing. We took this matter up with the Department of Commerce and subsequently with the Central Board of Revenue, and it was eventually decided by the latter that the paper was to be assessed as a "printing paper", *vide* paragraph 4 of the Central Board of Revenue's letter No. 1466/Cus./27 of the 11th June, 1928—

"The Board is unable to find any better definition of 'printing paper' than that of paper which is in ordinary practice mainly or solely used for printing purposes. In this formula the Board thinks that the reference to use should be interpreted as referring to use in India. It is unable to hold that at the time when the importations that you refer to were first made at Madras, it was possible to say that the paper in question was a printing paper judged by this test, whereas, as has already been stated, by the test of appearance there was at least a very large element of doubt whether it was a printing paper or a wrapping paper, and the Collector of Customs was right in giving the benefit of any such doubt to the importer. Since these importations first began, however, they have reached a considerable extent, and at the same time it has not been reported to the Government that paper of a closely similar quality is used to any large extent in India as a wrapping paper. The Collector of Customs, Madras, on the view that the meaning of trade terms changes with altered conditions now proposes to classify paper of the kind in question as 'printing paper', and the Board has given its provisional approval to this proposal, subject to re-consideration after it has given the importer or importers of the paper in question at Madras an opportunity to state any arguments to the contrary that they may have to offer. The final decision reached in this matter will be conveyed to you in due course."

The decision referred to in the above paragraph was confirmed by the Central Board of Revenue in their letter No. 1466-Cus.-27 of the 14th of August, 1928, to the Indian Paper Makers' Association.

For a time the importers were forced to pay the specific rate of duty of 1 anna per lb. for the supplies which they imported for the Madras Government. It was not long however, before they set their ingenuity to work and again evaded the duty, and have continued to do so successfully ever since, by instructing the manufacturers to produce a paper of mechanical contents of not less than 65 per cent. The order of the Madras Government for this class of paper is a larger one, amounting to some 600/700 tons of Unbleached Printing, and thus Indian mills are being deprived of valuable business because of the vagaries of the present classification, which, although intended to admit qualities of paper of genuine Newsprint quality only, is framed in such a way that evasions of the Protective duty, as illustrated above, are easily possible. We can produce samples, if necessary, showing the quality of the paper as it was in 1927 and the quality as it is now, showing the extent to which the paper has been cheapened to overcome the Protective duty.

Also, the Anglo-Norwegian Trade Journal for April, 1931, when reporting upon the woodpulp position, stated as follows:—

"Of course, prices are now at a level that bring loss to every Pulp Mill, however well situated, and a move, when it does come, must be upward. Shippers are therefore adopting an attitude of calm resignation, hoping that the long looked for improvement will shortly set in."

The Pulp and the Paper Industries habitually follow each other in prosperity and depression, and it may be said therefore that the above report refers equally to the conditions in Paper Mills as to Pulp Mills.

34. The Indian markets in which foreign competition is keenest are the ports, *i.e.*, Bombay, Rangoon and Madras. In Bombay the competition is particularly keen owing to the out rates quoted to that market, not only on account of the saving in freight, Bombay being nearer to European than any of the other ports, but because the merchants of that City are able to place such large orders that they secure very cut prices.

The Calcutta mills have never been able to make much headway in the Bombay market mainly for the geographical reason already mentioned. To a large extent it has been the policy of the mills preferably to compete with the importer in the upcountry markets rather than in Bombay itself, and had they adopted a different policy and tried to force the Bombay dealer to place his orders with local mills it would have meant bringing down prices to such a low level in Bombay as to result in paper from Calcutta finding its way into the upcountry markets *via* Bombay and interfering with the upcountry business of the mills.

Bombay is a very large consuming centre as well as an important point of distribution. There is however a persistent bias in favour of imported qualities and against qualities of local manufacture. Accordingly our progress is slow but we are confident of eventually winning over the Bombay consumer and converting him into a partizan in favour of Indian paper just as we have done in other markets since the tariff was introduced and the quality of our paper was improved.

It is in our opinion a curious fact, worthy of special note, that the movement against the use of imported goods has had no great effect so far as the paper industry is concerned and the Indian mills cannot be said to have benefited by it.

It must be expected that a claim for further protection will bring forth a considerable volume of protest from dealers whose interests are bound up in the importation of paper and it is only fair to ourselves that we should explain the reasons underlying their protests. At one time there may have been justification for a preference for foreign paper on account of quality and appearance, but we venture to say that this consideration was never the principal one with the majority of Bombay dealers.

The prices at which Indian mills sell their paper are fixed and are known by everybody throughout the trade. This is in the interests of the consumer. The wholesale dealer is thus only able to reserve for himself a certain margin of profit on Indian made paper and the consumer buys at Indian mill price with perhaps a small share of the discount allowed, to the dealer by the mills. The case is rather different, however, with foreign paper. The prices vary widely not only according to the different grades in each kind of paper, but according to the country of origin, and according to the size of order which the dealer is prepared to place with the foreign mill. As a matter of fact the uncertainty arising from such variations in price is considerably intensified because of the present very difficult conditions existing in the mills abroad, resulting in their accepting counter offers from dealers considerably lower than those mentioned in the original quotations. In consequence of these variations, the dealer is able to hide his cost price from the customer and very often even to conceal the country of origin. Thus he is often able to secure a very much higher price from the consumer simply because of the non-existence of any criterion of prices for imported paper and because the consumer cannot argue with the dealer on the basis of the foreign mills' price list as he could do in purchasing Indian made paper.

Again, with a large class of consumers, there is still a great bias in favour of the imported article, in spite of the fact that Indian mills are now turning out a paper which is in most cases in every way the equal of the imported kind, price for price. The dealer takes advantage of this bias when he has foreign paper to sell, and very often presses the imported paper on to the consumer by telling him that it is imported quality and

therefore must be better than the local mill's quality. It is very often possible for dealers to buy up cheap lots of imported paper at prices much lower than those at which local mills sell similar qualities, and the dealer is able to dispose of this paper at a fairly large profit under cover of the local mill's prices. In fact the position in this respect is very similar to that described by Sir Charles Innes when speaking in the legislature on 16th February, 1927, when he pointed out that the Bombay Iron Merchants Association would not import British Steel, preferring to buy from the Continent, because they could use the price of British Steel as the upper limit to which the price of inferior Continental steel could be forced and thereby make large profits at the expense of the consumer.

With protection the local mills are getting a stronger grip on the market and are gradually ousting foreign paper. The result is that the dealer finds that he is not able to make his former large profits. He is thus naturally opposed to protection and will do all he can to state a case against us.

Protection has not necessarily increased prices to the consumer. In many cases it merely takes away illegitimate profits on foreign papers with the result that orders tend to flow to the local industry. Thereby manufacturing costs come down and prices are reduced all round instead of being increased.

On the occasion referred to above Sir Charles Innes made a further interesting remark on the advantage of having a local industry. He said—“Now the value of Tata Steel to the country is that by the Tata Steel being able to come in at any time, it is impossible or at any rate difficult for importers of Continental steel to form any sort of ring or combine, and therefore Tata's steel does operate as a very valuable regulator of prices”.

The words apply to Indian paper with as much force as to Indian steel and should help to display in its true light and at its proper value the opposition to the policy of protection for the Indian paper trade.

In discussing markets where competition is keen we might also mention Travancore and Kashmir. Owing to treaty rights paper is allowed to enter into these markets free of British duty. In consequence, Indian mills have not been able to establish themselves well in either of these areas for a good many years, particularly in Travancore. The Kashmir Government certainly gives some preference to Indian paper and at very cut rates business is possible, but with the Travancore Government no such preference is shown.

35. The paper in which we use bamboo already commands the same price as similar qualities made from sabai grass or other indigenous materials with or without imported woodpulp.

36. There has been no marked variation in the range of qualities of the various classes of paper produced by us since protection was granted, except in regard to Badami. Even Badami, according to our statement of production figures, shows a proportionate increase along with other qualities, but the figure is misleading as regards giving an indication of market demand. Practically all of the Badami manufactured by us now is taken by Government and Indian States. Very little goes to the bazar, although at one time there was a very larger bazar demand for our Badami papers. The reason for the decline in the bazar demand is to be found in the substitution of cheap Newsprint, and particularly Newsprint which is coloured to imitate Badami. Badami as found in the bazar was at one time a purely Indian paper, but it has now been almost completely ousted by cheap mechanical foreign papers.

It might be mentioned that the quality of our production in every kind of paper which we make has improved vastly since protection was granted, so much so that we consider that we are justified in stating that our papers are now equal to imported papers of similar kind and price and in many cases they represent a better value than the imported article, judged from the standards of the Indian bazar dealer and the requirements of consumers in this country generally.

37. We have been adversely affected by the application of the existing test for determining liability to protective duty inasmuch as "substitute" papers offered cheaply by our Continental competitors have deprived us of a portion of our legitimate market for white papers and have interfered with the sale of Badamis and Unbleached papers for which there was formerly a good demand.

The intention of the original arrangement in August, 1924, was to free Newsprint only from protective duty. Newsprint imports increased from 17,762 tons in 1924-25 to 24,291 tons in 1929-30 and it is clear that there has been no interference with the supplies of this description.

Unfortunately certain other paper which is not Newsprint has been admitted free of protective duty owing to the nature of the criterion adopted for determining liability to protective duty. This paper is shewn in the Customs Returns as "printing not protected" and the imports as per the account of Sea Borne Trade have been as follows:—

	Tons.
1924-25 (before protection)	11,735
1925-26	6,357
1926-27	1,750
1927-28	4,086
1928-29	9,463
1929-30	7,817
1930-31	6,011

The first definition of Printing paper not liable to protective duty stipulated for a total content of not less than 65 per cent. of mechanical pulp in its composition. Subsequently after the Tariff Enquiry of 1927, it was decided that the percentage should not be calculated on the total weight or 'content' of the paper but only on its fibre content. The percentage figure was not altered. The effect of this new decision is apparent in the import figures above quoted. It narrowed the protective effect of the original proposal and opened the door to increasing quantities of a class of paper which is not Newsprint but is manufactured specially to compete with the lower grades of Indian mill made paper. This paper contains less than 65 per cent. of mechanical pulp if measured on total content or weight. As compared with true Newsprint it has a much higher proportion of Chemical pulp which adds to its strength and, with the assistance of China clay or other loading, gives it a much better appearance than an ordinary "mechanical" Newsprinting. Foreign manufacturers are no doubt at liberty, as Sir George Rainy said, to "Set their ingenuity to work" when a tariff is raised against them, but as Sir George himself indicated Evidence, Volume I, page 420) that is no reason for permitting the Tariff to be rendered ineffective. Such ingenuity must be dealt with as occasion arises. Unfortunately it has been applied with great success. Indeed it has been carried to such lengths that the Tariff Board itself has seen attempts to introduce, free of protective duty, a Laid Writing paper as a "mechanical printing" (*vide* their 1927 Report, page 40, lines 15 to 18). Again several of the principal importers actually attempted at the time of that enquiry to have the Tariff schedule altered so that writing paper containing more than 65 per cent. of mechanical pulp should be admitted free of protective duty. Nothing could be more indicative of their desire to be placed in a position to offer cheap substitutes for better paper. It was definitely an attempt to deprive the Indian industry of a certain measure of protection. It may be that the subsequent 16 per cent. fall in imports in 1929-30 and the 8 per cent. rise in declared average value in that year are indications that the consumer was gradually finding the cheap imitation printing unsuited to his requirements and that foreign manufacturers were consequently being obliged to exercise an increasing amount of 'ingenuity' but our point of view is that the ultimate consumer and the mills should have better protection.

In order to give effective protection we beg to suggest that our original suggestion for a system of licensing Newspapers imports might be reconsidered and perhaps applied in a slightly different way than originally proposed. The proposal was objected to in the interests of the smaller Newspapers who purchased their requirements from dealers instead of importing direct. Our new proposal would be to allow for their requirements by so framing the exemption for ordinary Newsprint as to admit free of duty paper containing mechanical pulp in the ratio of 75 per cent. of the fibre content. This would put no obstacle in the way of a cheap Newsprint press. For those Newspapers which require a paper of the description now admitted free of protective duty which might otherwise be made liable, a system of licensing would no doubt meet the case, especially since only a very small number of newspapers would require such paper. The suggestion overcomes several difficulties.

First.—By fixing the percentage of mechanical pulp at 75 per cent. irrespective of loading of 'filler' the line of demarcation between "News" and ordinary printing becomes much more clear and definite. It was the evidence of the Customs Department in 1927 that "65 per cent. is a most contentious lines" (*vide* 1927 Report, page 120, first para.).

Second.—It rectifies an anomaly. The Tariff Board lowered the percentage from 70 to 65 per cent. to allow for a 5 per cent. margin of error (actually the difference between 70 per cent. and 65 per cent. is 7 per cent. of the former figure). The Customs authorities nevertheless are forced by the exigencies of their work to make a further allowance no matter where the line is drawn by the Tariff Board (*vide* Evidence to 1927 Report, pages 118—126). *Third.*—It avoids the necessity of asking the Customs Department to make detailed chemical analysis of paper. It is appreciated that the method of "fibre count" is the readiest and most convenient way of ascertaining the proportion of 'mechanical' fibre.

To illustrate the effect of raising the percentage in the manner suggested consider a paper having 10 per cent. loading. Its composition under the new definition would compare with that of a similar paper under the present definition as follows:—

Material in Paper of which 90 per cent. is fibre and 10 per cent. loading.	Total Paper content under :—	
	(A) Present definition (65 per cent. mechanical in total fibre).	(B) Suggested new definition (75 per cent. mechanical in total fibre).
	Per cent.	Per cent.
Mechanical pulp	58.50	67.5
Chemical pulp	31.50	22.5
Loading	10.00	10.0
	<hr/> 100	<hr/> 100

In the one case the chemical pulp is about 54 per cent. of the mechanical whereas in the other it represents 33 per cent. of the mechanical. The ratio of the one pulp to the other is changed very considerably and the character of the paper becomes more evident under the new definition. The composition of the paper under the new definition is practically the same as it was when the 65 per cent. mechanical content was assessed on the total weight under the original intention of the Tariff Board, the mills and the Newspapers.

In other words, we are in effect asking for a restoration of the protective effect of the original definition in accordance with the understanding obtained between the mills and the Newspaper interests in 1924. When Sir George

Rainy introduced the amended Bill in 1927 he stated in the Legislative Assembly that "the law ought to be amended for under the Law as it is interpreted at present a considerable amount of 'Newsprint' which is being imported into India is being liable to the protective duty". After referring to the price of Newsprint Sir George Rainy went on to say "..... the imposition of the protective duty on certain classes of 'Newsprint' can serve no useful purpose. The only result would be that Newspapers would either have to pay more for their paper but still continue to import it or they will use a lower quality of imported paper. Neither of these results is a desirable result". It is clear from these remarks that the object of amending this portion of this Act was to protect the interests of the Newspaper press and that Sir George had nothing else in view. He certainly gave no other reasons for the amendment.

But were the interests of the Newspaper press actually endangered? The Newspapers were not the complainants. The demand for the so-called amendment was raised by the Import Trade and not by the Newspapers nor by the consumers. Looking at the evidence put before the Board in 1927 we find only two instances in which it was claimed that the original terms of the Act involved the payment of protective duty upon Newsprint intended for Newspapers, viz., the case of "The Times of India", Bombay, and the case of "Basumati", Calcutta. These Newspapers are importers and could very well import the special paper they require under license. The paper which benefited from the amendment of the Act was not Newspaper printing at all but something essentially different. The Assistant Collector of Customs, Calcutta, explained this in his evidence before the Board in the following words:—"Generally speaking the papers which are doubtful are not what the man in the street would call Newsprint, that is to say they are papers although within the meaning of the word 'Newsprint', which are used for printing handbills and so on" (page 126, paragraph 17).

It is undeniable that the import of such papers is not for the Newspaper press but for other purposes and we claim that its admission free of protective duty is injurious to the interests both of the ultimate consumer and of the Indian mills. It encroaches upon the market which ought to be supplied by our ordinary printing papers and it has practically ousted our cheaper qualities such as Badami.

An argument on behalf of paper made from mechanical pulp is that it is cheap and its cost is much below the cost of paper made from Indian materials. This does not quite apply in the case of unprotected printing and any such argument must lose force as Indian mill costs come down. It is interesting to note that on the import figures for 1929-30 the average value of unprotected printing was Rs. 326 per ton. With duty at 15 per cent. this would come to Rs. 375 but with the protective duty the cost would have come to Rs. 466 per ton or about Rs. 8 above the average value of Indian mill production. It is not desired to prevent the import of such paper but only to regulate it in the interests of the country and the country's industry. Mechanical pulp enters largely into the composition of imported cheap wrapping papers such as Nature Browns and Machine Glazed pressings but there is no reason why wrapping paper in general should be admitted free of protective duty and if exemptions are made they should be carefully defined. For instance bamboo is a fibre which will lend itself very suitably to the manufacture of Kraft paper and with a protective tariff imposed upon this quality there is no doubt that Indian manufacturers would undertake its production. We would venture the suggestion that some arrangement might be made whereby when Kraft is manufactured in India the Executive should be empowered to add it to the protected list. Other papers which are admitted free of protective duty are poster paper and M. G. Manilla. These were excluded because it was said that none of the Indian mills possessed the requisite plant for their manufacture. This is not now correct as there are machines in the country suitable for making these papers, moreover there are other methods which could readily be adopted were the market made available for the products of these descriptions.

38. A number of most important improvements have been effected at both mills. Among new processes adopted the most outstanding is the Cascade process of pulp digestion in use at No. 2 Mill, Kankinara. At both mills we have adopted the modern system of pulp washing and bleaching in a series of towers, straining the material after bleaching instead of before bleaching. At Titaghur an up-to-date Turbine of the extraction type gives the mill the benefit of cheap "pass-out" steam for process work and soda recovery.

In addition to the new plant required for these definite innovations a very great amount of departmental reconstruction has been taken in hand at both mills involving the expenditure of large sums in the demolition and reconstruction of buildings (particularly at Titaghur) and in the provision of new plant in replacement of worn-out machinery and in supplying numerous items of equipment in which the mills were formerly deficient.

In order to give an approximate idea of the extent of the work accomplished we may state that the expenditure upon what may be described as wholesale departmental reconstruction since 1927 amounts to the sum of Rs. 18,35,000 exclusive of the value of new plant previously purchased and now utilized. Over and above this we have expended since 1927 over Rs. 4 lakhs upon minor alterations at both mills including the provision of new equipment for the machine houses and other departments, the renovations of the old beaters at No. 2 mill and the repair of both mill jetties, etc.

The following is a brief description of the principal items of new plant installed:—

	Rs.
No. 1 Mill.	
1. New Turbo-Alternator of the pass-out type for 2500-K. W. output with necessary alterations at steam boilers for working at high pressure. Cost	2,10,000
2. New Beater House complete with 18 new beaters, nine chests, backwater tanks, pumps and motors	5,07,000
3. New Washing Straining and Bleaching equipment including housing	3,19,000
4. New Cutter House	64,000
	<hr/> 11,00,000

No. 2 Mill.	
1. New Turbo-Alternator of 600 K. W. to supplement existing power plant (steam engine) together with motors, cabling, etc.	2,02,000
2. Two new high pressure Lancashire steam boilers with fan, etc.	89,000
3. Completion of Kestner Soda Recovery plant	54,000
4. Re-arrangement of 8 grass digesters for bamboo together with liquor tanks, etc. Washing, Bleaching and Straining plant	1,78,000
5. Bamboo Crusher and Chipper arrangement	60,000
	<hr/> 5,83,000

Total for both mills exclusive of value of Burma Bamboo Mill plant, etc., utilised and not including numerous items of equipment such as machine strainers, Calendar Rolls, Duplex Cutters, etc., etc. 16,83,000

Much of capital expenditure at both mills was rendered obligatory due to the need for rendering worn-out roofs and floors and replacing antiquated or worn-out plant but it was anticipated that the re-arrangements of departments with new plant and equipment would lead to economies and improvements in manufacture.

Results have amply fulfilled expectations. Works costs have shown a marked reduction. Output has increased while the improvement in the quality of all our products is so marked as (in our opinion) to compel a complete reversal of ideas formerly entertained by some of our critics both as to the capabilities of the mills and in regard to the possibilities of Indian raw materials.

At the time of the 1924 enquiry severe strictures were passed upon the nature and quality of the paper produced. It was said the finish was poor, the surface often spotted, dirty and uneven, the out-turn not uniform nor dependable and the colour or shade not always up to the mark and liable to deteriorate quickly. Many of these defects were due to the inferior arrangements then in force for washing, cleaning and bleaching our grass pulp and some improvement was effected by the straining plant put in about the time of the enquiry. Since then however the radical reconstruction of the Washing, Bleaching and Straining Departments at No. 1 Mill and the similar arrangements adopted at No. 2 Mill have definitely overcome almost all the defects in question, while the "make" and texture of the paper at both mills have been immensely improved in consequence of improvements in the Beater Houses. Steam economies and the provision of new power plant have contributed to successful results, the adequate supply of power promoting steady running and better efficiency in various departments.

39. In answer to question No. 38 we have stated the expenditure upon departmental reconstruction and upon new equipment and minor alterations since 1927. To answer the present question we have also to take into account the figures for additions to machinery and plant for the previous years, as follows:

	No. 1 Mill.	No. 2 Mill.	Total.
	Rs.	Rs.	Rs.
1924-25	1,60,687	44,408	2,05,095
1925-26	36,008	...	36,008
1926-27	1,35,760	...	1,35,760
½ year September 1927	1,14,873	29,712	1,44,585
	<hr/>	<hr/>	<hr/>
	4,47,328	74,120	5,21,448
Expenditure since 1927 as stated in answer to Question No. 38 in round figures Rs. 20,35,000.			
Actually			20,44,609
			<hr/>
	Total	.	25,66,057
			<hr/>

The allocation as between (a) pulp and (b) paper has to be made in accordance with the purpose which the expenditure was intended to promote. For example, the new steam and power plant at Kankinara and the partial electrification of that mill was undertaken definitely for the purpose of rendering possible the manufacture of bamboo pulp.

On this basis the allocation would be as follows:—

	Rs.
(a) <i>Expenditure on account of Pulp—</i>	
Machinery and Plant additions at both mills to 30th September 1927	5,21,448
New washing, straining and bleaching equipment at No. 1 Mill	3,19,000
New installations at No. 2 Mill	5,83,000
Total	<u>14,23,448</u>
(b) <i>Expenditure on account of Paper—</i>	
Total expenditure as above stated	25,66,057
Expenditure on account of Pulp	<u>14,23,448</u>
Balance representing the cost of additions and alterations for paper	<u>11,42,609</u>

The expenditure under (a) which was due to the special requirements of bamboo pulp was as follows:—

	Rs.
New installation at No. 2 Mill	5,83,000
Diffusers <i>ex</i> -Burma Mill plant utilized at No. 2 Mill	1,14,030
Burma Mill plant erected at No. 1 Mill for bamboo experiments	1,35,760
	<u>8,32,790</u>

40. The replacements and extensions already completed form only part of a large and comprehensive scheme of complete Mill renovation planned for both Mills.

Proposals for No. 1 Mill include the construction and equipment of a new Digester house suitable for the production of pulp from bamboo and Sabai grass. The prosecution of this part of the scheme has been deferred pending results of Bamboo working at Kankinara and a final decision as to the size and type of digester best suited to requirements. Plans for No. 1 Mill will naturally be subject to considerable modification in the event of plans for a new Bamboo Pulp Mill coming to fruition in the near future but it is hoped that finances will allow of the replacement of the existing old grass digesting plant, the erection of necessary godowns and a modern finishing department with suitable arrangements for dealing with the paper from the point where it leaves the paper machine until it is despatched to the purchaser.

At No. 2 Mill a new Digester house is now under construction and will in the first instance be equipped with the five large digesters of new type now in course of manufacture in Scotland. Along with the new digester plant and its accessories we propose to instal one or more bamboo crushers of an improved type and it will also be necessary to make certain additions to the existing Washing, Bleaching and Pulp straining plant and to take in hand a reconstruction of the Soda Cousticizing plant.

The alterations and improvements at both Mills are planned with a view to future possibilities and permit of large development of existing manufacturing facilities as and when required.

41. The following is a statement of the nett value (after depreciation) of the Company's Mill property as shown in the Book at the 31st March 1931:—

	Rs.
(a) Leases and Concessions . . . . .	.....
(b & c) Land and Buildings	11,20,000
(d) Plant and Machinery	30,43,714
(e) Other Assets—	
1. Railway Siding	1,500
2. Flotilla	500
3. Motor Car	3,000
4. Motor Lorry	2,000
5. Furniture	5,000
6. Live Stock	1
	12,001
Total	41,75,715

42. We estimate that to replace our two Mills on the existing sites at Titaghur and Kankinara (with four machines each) would not cost less than Rs. 1½ crores divided as follows:—

	Lakhs.
	Rs.
(1) Buildings, etc.	50
(2) Machinery and Plant erected at sites	100
Total	150

It will be remembered that at the last enquiry we estimated the total all-in cost of a four machine mill such as our No. 1 Mill at Titaghur would amount to £600,000. At exchange 1s. 6d. this means Rs. 80 lakhs for each mill or Rs. 1,60.00.000 for two mills. This estimate was based upon a quotation of £300,000 for plant alone without allowing for freight and expenses on same, the cost of installation, buildings, jetties, sidings, water tanks, etc.

Assuming the machinery and plant for two mills cost £600,000 it would probably be safe to estimate the cost of bringing it to this country and installing it in buildings constructed in advance at a further sum of £150,000 making the total cost approximately £750,000 or say Rs. one crore.

The necessary buildings including godowns, bungalows and water storage facilities would not cost less than Rs. 20 lakhs for each mill to which has to be added the cost of jetties and railway sidings.

The cost of the recently erected two-machine mill in the Punjab was, we understand, about Rs. 78 lakhs, a figure which would make our estimate of replacement cost appear a low one.

The replacement value of the India Paper Pulp Company's Mill at Naihati—with one machine only—was estimated at Rs. 31 lakhs at the 1924 Enquiry and it would not seem unreasonable to suggest that *two* new four-machine mills would cost some five or six times the price of a single one-machine mill.

Our total capital expenditure on the two mills amounts to about Rs. 1½ crores up to date and it may reasonably be assumed that replacement cost would not fall short of that amount. Indeed, taking into account the fact that the eight paper-making machines were purchased at a time when machinery cost much less than it does to-day (six of them moreover having been bought from other mills at half their original cost) we question if replacement costs would work out quite so low as Rs. 1½ crores.

It might be urged that the existing eight machines could be replaced by a lesser number of more modern wide machines capable of giving equivalent total output but it is by no means certain that it would be advantageous to budget for replacement of the narrower machines in this way since their sizes make them particularly suited to the range of orders on which they work.

43. The following is a statement of the amounts written off for depreciation and the Reserve Funds created:—

For the year	Depreciations.			Reserves.		
	Rs.	A.	P.	Rs.	A.	P.
1924-25	76,099	15	4	.....	
1925-26	4,06,018	5	5	25,000	0	0
1926-27	6,17,053	14	11	1,75,000	0	0
1927-28	7,46,947	0	9	30,000	0	0
1928-29	5,92,790	0	9	93,108	7	9
1929-30	5,18,582	6	5	40,241	13	9
1930-31	4,82,429	6	7	21,082	11	4
Total	34,39,921	2	2	3,84,433	0	10

44.		Preference.	Ordinary.	Deferred.	
		Rs.	Rs.	Rs.	A. & P.
	(a) Share Capital ranking for Dividend—				
	1924-25*	8,35,000	17,50,000	Nil.	
	1925-26	3,34,000	4,37,500	1,75,000	0 0
	1926-27	3,34,000	4,37,500	1,88,790	0 0
	1927-28	3,34,000	4,37,500	2,08,335	0 0
	1928-29	11,50,000	4,37,500	2,85,535	0 0
	1929-30	11,50,000	4,37,500	3,04,920	0 0
	1930-31	11,50,000	4,37,500	3,17,995	0 0

* Note.—A financial reconstruction took place early in 1925-26 whereby the ordinary shares were reduced in nominal value by 75 per cent. and the Preference shares by 60 per cent.

	Preference.	Ordinary.	Deferred.
	Rs.	Rs.	Rs. A. P.
(b) Actual amounts distributed as dividends on each class of capital—			
Account 1924-25 (paid from Profit for September 1925)	13,860	} 21,875	
1925-26	26,720		
1926-27	26,720	43,750	.....
1927-28	26,720	43,750	.....
1928-29	92,000	1,09,375	73,349 11 5
1929-30	92,000	1,75,000	1,12,418 7 0
1930-31	92,000	1,53,125	1,08,724 13 6
	Per cent.	Per cent	Per cent
(c) Percentage—			
Account 1924-25 (paid from Profit for September 1925)	4	} 5	...
1925-26	8		...
1926-27	8	10	...
1927-28	8	10	...
1928-29	8	25	23.29
1929-30	8	40	35.35
1930-31	8	35	34.19

In the financial re-construction of the Company the ordinary shares were written down by 75 per cent. of the nominal value. The above percentages, therefore, are four times what they would have been on the capital prior to reconstruction. A 40 per cent. dividend to-day represents 10 per cent. on the old capital.

45. These are annexed (see Annexure H).

46 No debenture loan has been raised since 1921.

47 For these forms I and II please see end of questionnaire.

48. The statements [Annexures I (a) and (b)] herewith show details of the cost per ton of manufactured pulps in the wet stage which are comparable in quality with the bulk of imported pulp. We do not dry our pulps prior to conversion into paper, but so far as costs are concerned, these are calculated upon a bone dry basis. For the purpose of comparison with wood-pulp costs we also show the cost figures on the basis of pulps "air dry"

The allocation of items in the works cost, other than primary and auxiliary materials, is made as follows:—

(i) Labour in accordance with Departmental wages sheet.

(ii) Power in accordance with metered quantities or when these are not available in accordance with close approximate estimates based on actual test.

(iii) Establishment charged direct.

(iv) Miscellaneous. The cost sheets detail these. On cost charges represent share of management and other overheads not directly chargeable to any of the sub-heads shown in the cost sheets.

49. In dealing with this question we assume that comment is required upon the works costs of pulp as given in answer to Question No. 48 and also upon the figures in regard to paper given in answer to Question No. 47.

Briefly, our answer is that we consider all our works costs are eventually capable of further reduction provided continuance of the tariff enables us to keep the Mills fully employed and that conditions are not abnormal. We hope to get costs down to the following figures:—

	Present Costs.	Expected Reduction.	Future Cost.
	Rs	Rs. a.	Rs. a.
Grass Pulp	204	15 0	189 0
Bamboo Pulp (or with Sulphate). . . .	204	31 8	172 8
		41 8	162 8
Finished Paper	360	13 0	347 0

In support of these figures we give the following further details:—

Grass Pulp Costs.

Grass.—Cost of this material for the last year was charged to costs at Rs. 49.64 per ton. It is expected that this figure can be improved upon within the next few years and the cost aimed at Rs. 46 per ton, if this is attained it will be equal to a reduction in this item of almost Rs. 9 per ton of pulp.

Chemical.—It is very difficult to promise a reduction in this item, although a further improvement is expected in our Caustic Recovery.

Conversion Charges.

Labour.—A saving in this section is expected as a result of mechanical handling of the grass into the digesters, which we estimate will be equal to Rs. 4 per ton of pulp.

Repairs and Maintenance of Plant.—During the past year, the cost of this item has been high on account of the heavy replacement expenses such as welding and renewing false bottoms, etc., on all Digesters. On a basis of normal repairs cost, this item should show a decrease of Rs. 2 per ton of pulp.

The above are the only reductions which we can predict with some degree of confidence. They are equal to a total reduction of Rs. 15 per ton, this will bring the cost of grass pulp down to Rs. 189.

Bamboo Pulp.

Materials.—The present cost of this item averages Rs. 30 per ton of raw Bamboo. It is anticipated that this cost will be reduced to Rs. 26 per ton, which will be equal to a reduction of Rs. 10 per ton of pulp.

Chemicals.—Everything in this cost hangs upon the quantity of Soda recovered after use in digestion. Our best percentage of recovery so far has been 69.41 per cent. and we are of opinion that 75 per cent. is a reasonable figure to expect under normal working conditions. At present we use Cream Caustic (76.77 per cent.) to make up our losses. On this basis and assuming a 75 per cent. recovery we expect to reduce our Chemical cost by Rs. 15 per ton of pulp. On the other hand if the Sulphate process proves to be feasible at the Mills under present conditions it will then be possible to make up our Caustic losses with a chemical which will be very much cheaper than the present Cream Caustic. It is estimated that the saving in chemicals under the Sulphate process would mean a further saving of at least Rs. 10 per ton of pulp.

Conversion charges.—With the installation of the new plant it is expected that a general reduction of at least 10 per cent. will be made.

Taking into consideration the above expected saving we estimate that our future Bamboo Pulp costs will be as follows:—

	Caustic Process.	Sulphate Process.
	Rs.	Rs.
Materials	66-218	66-218
Chemicals	47-360	37-360
Conversion and on-cost charges	53-923	58-923
Total Works cost per ton of pulp	172-501	162-501

Future Paper Costs.

Finished Paper.—Materials. We summarize the anticipated reduction in our costs as under:—

Grass Pulp.—Reduction of Rs. 15 per ton on yearly production of 6,000 tons equal to Rs. 90,000.

Bamboo.—The reduction of Rs. 31.761 per ton with the Caustic process on an annual output of 3,000 tons will be equal to a yearly saving of Rs. 95,293.

On a basis of the reduction anticipated from the Sulphate process the additional saving over the Caustic process will be Rs. 30,000.

Conversion Charges.—In making our estimates we feel it would be inadvisable to budget for an increase in our paper production, we therefore do not put forward any anticipated reduction from an expansion of production. On the other hand we consider that our costs for Repairs and Maintenance of plant and buildings are capable of a reduction of about 10 per cent. later on as we have had to carry out a considerable amount of extra work during the past few years.

The total of the above estimated savings will be equal to approximately Rs. 13 per ton of finished paper.

In this estimate we do not take into consideration the possible additional saving from the Sulphate process on account of the uncertainty that this chemical can be brought into Mill use, at any rate without heavy expense for special plant to get rid of the odour accompanying its use.

50. The following are the average figures in question:—

Stocks (Average Value)---		Rs.
Coal		35,000
Materials		18,50,000
Finished goods		7,15,000
Total Stocks (average) . .		26,00,000
Outstandings in respect of goods sold—Average amount		19,15,000
Total Average Value of Stocks and Outstandings		45,15,000

51. Please see Annexure J.

52. Before answering this question in the form in which it is put to us we would venture to suggest that it is not irrelevant to this Enquiry into the working of the Act of 1925 to consider what was the actual aim of that legislation. On the contrary, we think that such a question goes to the root of the whole matter. In our view it is impossible to read the Tariff Board Report and the debates in the Legislative Assembly without coming to the conclusion that the true underlying object and intention of the Bill was primarily to put India in a position to meet her own requirements for paper by the revival and re-establishment of the Indian Paper Industry. If this be so, then it follows that the development of the Bamboo pulp industry was adopted mainly as a means towards that end. Undoubtedly, the promotion of the Bamboo Pulp Industry was considered desirable in the interests of India's general industrial welfare but our view is that it was not wanted merely for the purpose of providing India with another *raw material* for export to the industrial advantage of other countries. There was a more important purpose to be served, *viz.*, that of ensuring the more economical and extensive manufacture of *paper* in India. Looking at the matter from this point of view it appears to us that the needs of the substantive Industry (Paper-making) definitely call for further consideration at this time.

Another matter requiring comment is the finding of the Tariff Board which is referred to in the question for reply. We may be permitted to observe regarding it that the claims of the older paper mills were not thereby ruled out unconditionally nor did the Legislature subsequently see any reason to debar the grass mills from the advantages of Protection.

The grass mills (as the majority of the *Paper Mills* are described) were assisted to survive because (to quote from the Report, para. 163) "the disappearance of the industry at the moment when the use of Bamboo opens up fresh avenues of development in the future would be very regrettable". The development of Bamboo has not yet got beyond the pioneering stage, but it is making satisfactory progress. In the light of these facts there surely can be no arguments for the withdrawal of the assistance the Paper industry is at present receiving by means of the Protective Tariff.

Turning now to the case which we are able to make within the limits of the question we have to say in the first instance that the policy of protection has not merely kept alive an industry of some importance to the country but it is justifying itself as probably the very soundest and most economical means of promoting the development of bamboo pulp manufacture and the eventual establishment of a great industry based upon this material. The two industries of pulp-making and paper-making are mutually interdependent. Each is essential to the other. In India at any rate the former

could never have come into existence apart from the latter and its development assistance to the Bamboo Pulp Industry, therefore if the paper-making Indian Paper-making Industry. For this reason, if for none other, a Protective Tariff on paper was, and is, the best means of applying Government assistance to the Bamboo Pulp Industry, therefore if the paper-making industry requires help, the Tariff should be continued.

This is not contradictory to the findings of the 1925 Report for the Board in para. 37 thereof declared: "the whole position might be changed if more paper were made from Bamboo and if the grass mills could overcome the defects which interfere with the sale of their paper".

In other answers we show how defects in paper have been overcome. Here we have to point out that, owing to the work already accomplished in Bamboo, the former almost absolute dependence of the industry upon grass has now disappeared.

The position has therefore completely changed and arguments based upon former adverse findings are now without force.

We consider that the matter has now reached the stage foreseen in para. 133 of the Tariff Board Report. The "preliminary period of research and investigation" has resulted in the establishment of the Soda process on a scale which has proved the possibilities on the manufacturing side and makes it possible to ascertain with fair accuracy what the cost of making paper from bamboo is likely to be. It is now for Government to decide in the light of the information obtained whether a definite policy of protection should be adopted for the Paper Industry.

In support of our claim for protection we submit the following points some of which were mentioned in our letter of 27th April, 1931, viz.:-

1. We are promoting the purposes of the Act and expect success if Government does not withdraw or withhold assistance.
2. Our industry is essential to the development of Bamboo.
3. It has freed itself from the need to depend upon Sabai grass while at the same time making such advantageous use of that material as to justify better appreciation of it as one of the natural advantages appertaining to the Indian Industry.
4. There is solid ground for anticipating that we can eventually do without protection, the present need arising from the world-wide depression in trade and the over-production of woodpulp. On the latter point we adduce some facts in our answer to question No. 15.
5. The present and prospective requirements of India assure scope for enormous expansion of the comparatively small industry of the present day and India ought to take the long view in regard to her own needs and requirements.
6. Overproduction of pulp to-day should not obscure the fact that supplies of timber are being used faster than they grow and that prices must eventually rise. (*Vide*, answer to question No. 15.)
7. Our case is not made in the interests of exporters of India's raw material but in the interests of her National Progress because, in the words of the Fiscal Commission, the development of our industry "would be very much to the advantage of the country as a whole creating new sources of wealth, encouraging the accumulation of Capital, enlarging the public revenues, providing more profitable employment for labour, reducing the excessive dependence of the country on the unstable profits of agriculture and finally stimulating the national life and developing the national character".
8. The Pulp and paper industry is a key industry whose products are such that interference with supply would bring the whole industrial system to a stop. Paper can be made from almost any

fibre therefore any country can—given time—find means of producing it. But once a country develops a need for paper in large quantities it can never provide its own requirements in time of emergency unless it has the necessary manufacturing facilities within its own borders.

9. The value of the industry was proved in the war when it saved the country large sums as well as maintaining all essential publications without a break and avoiding the need for Government control. (*Vide Industrial Handbook, 1919.*)
 10. The value of Indian Mill production in 1929 was Rs. 1,87,00,000 and after making full allowance for the cost of imported materials and stores, etc., the industry spends within the country over Rs. 1½ crores annually for local raw materials, chemicals, coal and wages, etc.
 11. The indirect contribution of the industry to the country's welfare cannot be computed but in stimulating the development of many related industries, providing wider and more profitable employment for labour therein as in helping to create new sources of wealth, an industry such as ours is invaluable.
 12. The Indian Industry safeguards the country against foreign exploitation in the event of a future woodpulp shortage or paper famine such as occurred in 1920. It ensures good service and fair prices, as is proved by the fact that in a period of falling prices whose incidence operates so as to neutralise the protective element in the Paper duties, the Indian Mills have been able to obtain 15,000 tons more business against the keenest foreign competition.
 13. Failure to provide judicious support to an industry which now enjoys a good standing and requires relatively small aid is likely to be disastrous not only to the industry but also to hopes of the eventual development of the Bamboo pulp industry in India. Should the paper-making Industry die out it may be a long time before capital could, in the best circumstances, be attracted to its revival and in the meantime the country may have to pay dear for enormous imports to satisfy her increasing demands besides losing the advantage of utilizing her own resources upon an expanding scale.
 14. Finally if the result of the present enquiry is to establish the desirability of giving definite protection to the Bamboo Pulp Industry then it follows that paper-making must similarly be protected for the same reasons which led the Tariff Board to reach certain conclusions in their recent Report regarding "Railway material made of steel". We quote from para. 8 of their report as follows:—"..... the market for various kinds of steel made in India depends on the existence of the Engineering Industry and that, therefore, it is unnecessary to discuss whether this industry fulfilled the conditions for Protection laid down by the Fiscal Commission." Insert the words "Bamboo Pulp" in place of "various kinds of steel" and the word "paper-making" in place of the word "Engineering" and our point is clear.
53. (i) We favour a specific duty.
- (ii) At present rate, subject to certain conditions.
- (iii) On all classes of paper except newspaper printing and such other special papers which may from time to time be classified as "non-protected".

In regard to (i) we favour the method of Protection by means of a specific duty because of the ease and certainty with which it is collected, and because it gives little opportunity for dispute or fraud and the importer and everybody interested knows what has to be paid irrespective of any fluctuations in price.

We are aware of the disadvantages of a specific duty one of which is that Government does not benefit when prices go up. Others are that the industry may, in such circumstances, be deprived of part of the benefit intended by the legislature or if the general level of prices falls the protection may prove excessive.

The answer to the first objection is that if foreign prices for paper were to become very high there would be no need for a protective tariff and to increase it would not encourage imports or the growth of import revenue.

The answer to the second and third objections is that they have no force when considered in relation to the Indian Paper Mill Industry which has its own raw materials the prices of which are not affected by price movements of materials used in other countries. When prices elsewhere are high the Indian manufacturer may have his difficulties, but, at the worst, these are as naught compared with the hardships he has to undergo when prices abroad are low. It is then that he needs all the protection he can obtain.

It is possible that a highly scientific tariff would adopt different specific duties for different classes of paper. If this were necessary we think it would be best done by fixing a general specific duty and any necessary variations could be arranged by means of definite percentages of surcharge or of rebate for specified descriptions of paper.

Ad valorem duties on the other hand are a nuisance to all concerned but convenient when rates of duty are very low. When prices are high the *ad valorem* system puts a premium upon dishonesty and at the best the importer often does not know what he may have to pay by the time his goods arrive although in India this awkward feature is partially overcome by assessing valuations annually upon the basis of the current local wholesale prices.

(ii) When the Tariff Board fixed the present rate of specific duty they did so upon a consideration of the difference between two prices:—

- (a) the price at which the Indian Manufacturer could sell,
- (b) the price at which paper could be sold by importer.

To ascertain (a) they took as their basis the then lowest, works cost of the Indian Paper Pulp Company and added certain overheads.

Following the same method and taking our own works cost for the last completed year as the basis we calculate (a) as follows:—

	Rs.
Average cost f.o.r. Mills	360-075
Head Offices and Selling Expenses	23-952
Financial charges (interest on working capital)	19-833
	<hr/>
Total	403-860
	<hr/>

to which we have to add allowance for depreciation and for a fair return on Capital. Now the fact that our block assets are heavily written down in our books doubtless governs the decision of the income tax authorities as to the amount of depreciation allowable as a charge upon profits before assessment for tax but it has no bearing on the question now before us and should be disregarded. The amount of depreciation covered in the selling price ought to be in proportion to the replacement cost of the machinery and buildings. This was the principle adopted by the Tariff Board in arriving at the "overheads" to be added to works cost in order to ascertain the figure which the India Paper Pulp Company must realize "for the paper sold if they are to meet all charges and provide fully for depreciation" (*vide* Report, para. 141.)

If the replacement value of our Mill is agreed at Rs. 1½ crores then depreciation on this amount would be Rs. 9.37.500 per annum and on an

output of 19,000 tons this works out at Rs. 49 per ton. This is in keeping with the finding of the Tariff Board which put the figure at Rs. 50. For return on capital we require approximately Rs. 21 per ton, viz. :—

	Rs.
On Preference capital Rs. 11,50,000 at 8 per cent. .	92,000
On Ordinary capital Rs. 4,37,500 }	3,06,250
On Deferred capital Rs. 3,50,000 }	
	<hr/> 3,98,250 <hr/>

* NOTE.—This amount gives 10 per cent. on the original value of the ordinary shares.

	Rs.
The cost figures already given was	403·860
Add depreciation as above	49·000
Return on share capital	21·000
	<hr/>
The total price (a) required is	473·860 <hr/>

To ascertain (b) the price at which importers can sell we base our calculations on the offers now being made by mills in Europe in consequence of the recent heavy fall in woodpulp prices. White Printing paper is obtainable at any Indian port at £22 c.i.f. per ton. This price works out in Rupees as follows :—

	Rs.	A.	P.
£22 c.i.f. at Exchange 1s. 6d.	293	5	4
Add landing charges as per evidence given on page 137 of 1927 Report—Rs. 7 to Rs. 8 per ton, say	7	0	0
Existing specific duty	140	0	0
	<hr/>		
	440	5	4
“ Cut ” profit at 2½ per cent.	11	0	2
	<hr/>		
Price (b) at which the paper can be sold	451	5	6

The importer can, on these figures, undersell the Mills by Rs. 22 per ton in spite of the existing specific duty. A claim for additional protection to this extent might be considered not unjustified to the extent to which the position is affected by the following two facts :—

- (1) The rise in the rupee exchange since 1924 which nullified part of the protective effect of the tariff. The latter merely brought back prices to the 1s. 4d. level.
- (2) The recent heavy fall in woodpulp prices due to depression in trade and the over-production of certain descriptions of woodpulp.

We realize also that if protection is necessary and if the advantages to be derived from it are held to outweigh any objections which may exist then

the measures taken must be adequate to secure this purpose (*vide* Report on Steel Industry, 1924, para. 80).

Although the specific duty would work out at Rs. 162 per ton if calculated on a similar basis to the Tariff Board's figure at the time of 1924 Enquiry, we realise that for economic reasons Government might not desire to enhance rates at the present time. We are therefore extremely reluctant to ask for **any** increase and would rather endeavour to meet competition with the duty maintained at the current rate of one anna per pound (Rs. 140 per ton) without any surcharge provided there is no duty on imported pulp and subject to other suggestions we have to make. One of these is that the Legislature should be moved to fix the period of protection at ten years, at the same time empowering the Executive to increase the duty, if found necessary after due enquiry within the period, by means of notification.

(iii) The Tariff Board said in para. 149 of their 1925 Report that the protective duties they would recommend would "extend only to Writing and Printing papers, a description which covers nearly 90 per cent. of the output of the grass mills and almost the whole of the output of the Naihati Mill". Such a cautious measure of protection gives the Indian Mills a definitely limited field for development and does not encourage them to cater for a general range of qualities as required by the market. The exemption of certain classes of printing papers still further restricted the scope of the local industry and might have had a very injurious effect had it not been for the increased demand for higher qualities. We hold that the results of the preliminary experimental period of protection now justify the removal of limitations and that the development of the local industry on the broadest lines ought to be the aim of Protective Legislation. It is vitally necessary that the scope of the Tariff Board should be widened to make more orders available which will permit of greater expansion of production and specialization in Indian Mills, all of which will have the effect of helping to reduce the cost of production and, consequently, place Indian Mills in a better position to meet the competition of importers. As has been explained elsewhere, bamboo has now been proved suitable for the manufacture of all qualities of paper in general use, and the case for the exclusion from the protective Tariff of such qualities as Manillas, Kraft, Cartridge papers, etc., does not exist to-day as it may have done at the time of the 1924 Enquiry. In fact, the Protection of these additional lines is now essential to the proper development of the Bamboo pulp industry. If it is considered necessary to admit certain descriptions of paper into the country free of protective duty the most careful discrimination should be made as to the nature of the paper so exempted. Moreover the Legislature should empower the Executive to transfer any or all of the exempted descriptions or qualities of paper to the "Protected" list by notification in the "Gazette of India." The Tariff Board said that there were two classes of paper it was desirable to exclude:—

- (1) Special papers which are not made in India, do not compete with Indian Paper, and can be readily identified for Customs purposes.
- (2) Expensive papers of high quality which the Indian Mills cannot manufacture profitably.

With regard to class (2) above mentioned, it is unnecessary to exclude these papers from the protective tariff as they are usually sold at prices over five annas per pound and if made subject to a specific duty of one anna per lb. or 20 per cent. *ad valorem*, whichever is the higher, they will usually be subject to a duty in excess of the specific duty.

In answer to question No. 37 we have explained with regard to class (1) above that a stringent classification is necessary to prevent the undue substitution of cheap mechanical woodpulp papers for the better classes made by the Indian Mills and preferred by the ultimate consumer. We have also submitted certain suggestions as to possible means of putting a stop to this practice which is contrary to the interest of the actual consumer as well as detrimental to the progress of the Indian industry.

FORM I—contd.

	1927-28.		1928-29.		1929-30.		1930-31.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
Grass	14,465	Rs. 7,50,043	14,186	Rs. 7,81,149	15,553	Rs. 8,64,170	15,063	Rs. 8,27,405
Bamboo	337	13,480	995	39,006	496	17,648	5,526	1,87,352
Rags, etc.	645	25,786	381	23,367	289	22,481	162	16,206
Hemp Ropes	407	39,515	438	42,352	415	43,050	769	64,258
Waste Papers	2,146	1,91,287	1,803	1,65,334	2,103	1,94,976	1,505	1,35,637
Total Primary Materials	18,000	10,20,111	17,803	10,52,198	18,856	11,42,325	24,615	12,30,858
Purchased Pulp	10,320	22,10,874	12,222	23,60,178	11,115	20,76,194	10,026	20,29,113
Auxiliary Raw Material								
China Clay	3,190	1,96,841	3,450	2,16,982	3,082	1,93,256	2,880	1,53,374
Alum	1,127-15	1,00,700	1,246-80	1,07,846	1,251-15	1,07,584	1,205-30	1,09,288
Rosin	530-30	1,74,161	544-20	1,77,299	518-50	1,75,662	563-15	1,89,323
Alkali	545-20	62,883	233-25	27,602	301-85	38,586	249-20	32,639
Lime	3,412-75	1,24,073	3,277-95	1,01,645	3,102-95	97,904	4,107-20	1,34,922
Salt	1,801-14	59,355	2,100-85	66,751	2,139-53	62,438	2,343-78	57,199
Sulphuric Acid	95	107	2-25	317	10	11	1-90	652
Hydrochloric Acid	16-05	3,693	16-20	4,044	13-85	3,607	15-15	5,068
Starch	3-20	764	7-75	1,905	14-05	3,671	15-90	3,407
Glue	1-30	897	0-01	1	1-95	1,551	1-05	915
Sulphur	60	79	..	..	..	..	4-35	538
Sodium Sulphide	21-35	3,487	7-50	1,327	..	..	67-75	11,488
Salt Crude Cake	..	..	1-00	21	..	..	..	..
Caustic Soda	32-25	7,579	60-25	14,819	136-25	22,476	540-90	1,28,015
Silicate of Soda	12-85	1,958	20-30	4,069	5-00	1,178	85	192
Caustic Potash	..	..	..	..	..	..	..	..
Bleach	..	..	..	..	..	..	..	..
Bleaching Powder	..	..	..	..	..	..	..	..

FORM II.

Works cost per ton of Finished Paper.

	1924-25.		1925-26.		1926-27.		1927-28.		1928-29.		1929-30.		1930-31.	
	Quan- tity.	Actual Value.	Quan- tity.	Actual Value.	Quan- tity.	Actual Value.	Quan- tity.	Actual Value.	Quan- tity.	Actual Value.	Quan- tity.	Actual Value.	Quan- tity.	Actual Value.
	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.
Primary Raw Mate- rials—														
Grass . . .	1.208	77-139	783	44-225	880	52-891	818	42-152	747	41-156	880	46-111	813	42-960
Bamboo . . .	..005	..005	..002	..077	..008	..380	..019	..763	..052	2-056	..026	..942	..287	9-727
Resin, etc. . .	..032	2-968	..040	3-360	..055	2-974	..088	1-459	..021	1-231	..015	1-199	..008	..841
Knop Ropes . .	..026	2-736	..033	3-237	..030	3-119	..038	2-256	..023	2-268	..022	2-297	..039	3-336
Waste Papers . .	..127	14-358	..139	14-507	..118	12-321	..122	10-822	..085	8-787	..113	10-404	..078	7-042
Total . . .	1-413	97-204	887	65-486	1-141	71-635	1-018	57-482	938	65-437	1-006	60-953	1-273	68-906
Purchased Pulp . .	..432	96-593	..556	114-304	..531	115-339	..554	125-085	..644	124-331	..593	110-783	..520	105-354
Auxiliary Raw Mate- rials—														
China Clay . . .	..298	13-741	..233	15-330	..198	12-624	..180	11-138	..182	11-432	..165	10-312	..150	7-963
Alum . . .	..072	11-335	..080	6-511	..066	6-163	..064	5-697	..066	5-982	..067	5-740	..066	5-674
Rosin . . .	..022	6-106	..023	6-304	..030	9-032	..030	9-854	..029	9-341	..028	9-373	..029	9-856
Alkali . . .	..126	15-539	..043	6-026	..062	7-030	..031	8-568	..012	1-454	..016	2-160	..013	1-684
Lime . . .	..221	7-397	..178	6-043	..203	6-937	..193	7-020	..173	6-855	..166	5-224	..213	7-005
Salt . . .	..113	2-960	..097	2-630	..100	3-160	..102	3-358	..111	3-617	..114	3-331	..122	2-970
Sulph. Acid . .	..001	..125	..001	..053	..012	..012	..001	..066	..001	..017	..001	..192	..001	..084
Hydro. Acid . .	..062	..547	..001	..364	..001	..227	..001	..209	..001	..213	..001	..186	..001	..263
Starch . . .	..007	..007	..001	..051	..007	..007	..001	..043	..001	..100	..001	..083	..001	..179
Glue . . .	..001	..001	..001	..001	..001	..001	..001	..051	..001	..001	..001	..001	..001	..047
Sulphur Sulphide .	..015	..015	..009	..009	..001	..001	..001	..004	..001	..001	..001	..001	..001	..028
Salt Crude Cake .	..001	..001	..001	..018	..001	..040	..001	..197	..001	..071	..001	..001	..003	..596
Caustic Soda . .	..001	..001	..001	..001	..001	..001	..002	..429	..003	..781	..007	1-200	..033	6-646

41-728	41-018	..
32-484	23-553	..
33-203	40-744	..

FORM III.

	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
<i>Grass.</i>							
(1) Quantity of material used	18,790.70	12,682.15	15,917.90	14,464.75	14,185.85	15,538.30	15,663.30
(2) Quantity of finished paper which material represents	5,686.42	3,841.61	5,016.94	4,636.19	4,346.54	5,279.33	5,486.92
<i>Bamboo.</i>							
(1) Quantity of material used	1.90	30.70	142.85	337.20	994.75	495.85	5,526.30
(2) Quantity of finished paper which material represents	.63	10.23	47.62	112.49	331.58	155.28	1,841.57
<i>Other Local Fibres.</i>							
(1) Quantity of material used	3,185.30	3,415.60	3,480.20	3,197.95	2,632.40	2,807.16	2,424.10
(2) Quantity of finished paper which material represents	2,208.29	2,384.15	2,391.60	2,240.72	1,843.85	1,999.82	1,681.36
<i>Total Indigenous Fibres.</i>							
(1) Quantity of material used	21,977.90	16,028.45	19,540.95	17,990.90	17,803.90	18,856.31	24,615.70
(2) Quantity of finished paper which material represents	7,895.84	6,235.99	7,456.25	6,989.31	6,521.97	7,444.43	9,009.85
<i>Imported Pulp.</i>							
(1) Quantity of material used	6,725.05	8,932.25	9,000.15	10,319.85	12,221.50	11,114.89	10,026.20
(2) Quantity of finished paper which material represents	5,716.30	7,592.41	7,726.63	8,771.87	10,388.27	9,447.58	8,522.27
<i>China Clay.</i>							
(1) Quantity of material used	3,240.60	3,736.00	3,225.20	3,459.70	3,449.60	3,081.65	2,879.80
(2) Quantity of finished paper which material represents	1,944.36	2,241.60	1,935.12	1,913.82	2,069.73	1,848.99	1,727.88
<i>Other Auxiliary Materials.</i>							
(1) Quantity of material used	8,774.93	6,528.65	7,946.48	7,515.71	7,527.45	7,495.37	9,206.64
(2) Quantity of finished paper which material represents	NIL.	NIL.	NIL.	NIL.	NIL.	NIL.	NIL.
<i>Total.</i>							
(1) Quantity of material used	40,718.18	35,882.35	39,802.78	39,025.16	41,001.55	40,549.13	46,728.34
(2) Quantity of finished paper	15,556	10,070	17,118	17,675	18,980	18,741	19,260

ANNEXURE A.

(Reference Question No. 4.)

Statement of Paper Production (showing Qualities) at the above mills since 1923-24.

	YEAR ENDING 31ST MARCH 1925.		YEAR ENDING 31ST MARCH 1926.		YEAR ENDING 31ST MARCH 1927.		YEAR ENDING 31ST MARCH 1928.		YEAR ENDING 31ST MARCH 1929.		YEAR ENDING 31ST MARCH 1930.		YEAR ENDING 31ST MARCH 1931.	
	Ton- nage.	Per cent.	Ton- nage.	Per cent.	Ton- nage.	Per cent.	Ton- nage.	Per cent.	Ton- nage.	Per cent.	Ton- nage.	Per cent.	Ton- nage.	Per cent.
1. Cream Laid and Waves (Writ- ings).	2,543	16.847	3,779	23.516	4,398	25.692	4,071	23.033	3,968	21.014	4,294	22.912	4,198	21.796
2. White Printings	6,114	39.303	6,551	42.632	7,216	43.154	7,064	45.057	8,420	44.362	7,760	41.455	8,104	42.078
3. Unbleached Printing	1,964	12.625	1,242	7.729	1,051	6.140	1,232	6.070	1,942	10.232	1,390	7.417	2,129	11.054
4. Sup. Badami and Manila	485	3.118	787	4.897	692	4.043	316	1.788	531	2.738	348	1.867	390	2.025
5. Badami	1,445	9.289	1,552	8.413	1,415	8.266	1,903	10.794	1,638	8.604	2,086	11.180	1,760	9.264
6. Colours	307	1.974	295	1.836	390	2.193	524	2.965	492	2.512	592	3.159	1,750	8.864
7. News Printing	640	4.114	148	.921	66	.386			109	.574	9	.048		
8. Brown	797	5.123	682	4.244	663	3.873	679	3.842	561	2.936	835	4.461	210	1.090
9. Azure Laid	78	.502	145	.902	286	1.671	387	2.190	416	2.152	277	1.478	407	2.113
10. Banks (White and Coloured)	343	2.205	146	.909	264	1.542	298	1.686	456	2.403	636	3.394	367	1.906
11. Typewriting					38	.222	64	.362	31	.163			15	.077
12. Blottings	46	.296	74	.460	322	1.881	24	.136	264	1.391	240	1.281	250	1.298
13. Stamp Cap	198	1.273							45	.237	174	.928	472	2.451
14. Ivory Finish									10	.053	66	.352		
15. Inkation Art									5	.026	11	.053	152	.789
16. Indian Account Book Paper									17	.090	13	.069	26	.135
17. Duplicating														
Paper Production	14,917	96.233	15,505	96.484	16,771	97.973	17,467	98.823	18,980	99.737	18,741	100.000	19,200	100.000
18. Wrappers	586	3.767	656	3.516	347	2.027	208	1.177	50	.263				
Total Production	15,556	100.000	16,070	100.000	17,118	100.000	17,675	100.000	18,980	100.000	18,741	100.000	19,260	100.000

The Production of Manila Paper is included in Nos. 3 & 4 and our Sales Records show that 415 Tons was sold during 1929 and 556 Tons during 1930.

ANNEXURE B.

(Reference Question No. 5.)

Annual Consumption of Materials.

	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Grass	18,791	12,582	15,918	14,465	14,186	15,553	16,663
Bamboo	2	31	143	337	995	496	5,526
Rags	807	1,306	949	645	381	289	162
Hemp Ropes	398	535	507	407	438	415	759
Waste Paper	1,981	2,232	2,024	2,146	1,803	2,103	1,505
Wood Pulp	6,725	8,933	9,090	10,320	12,222	11,115	10,026½
TOTAL	28,704	25,619	28,631	28,320	30,025	29,971	34,641

ANNEXURE C.

(Reference Question No. 12.)

Imports of Woodpulp.

Years.	E. B. SULPHITE.		STRONG SULPHITE.		KRAFT.		MECHANICAL.		TOTAL.	Country of origin.
	Tons.	Average price f.o.b.	Tons.	Average price f.o.b.	Tons.	Average price f.o.b.	Tons.	Average price f.o.b.		
1924-25 . . .	6,050 300	£13 1 0	..	..	..	..	300	£8 2 0	6,350 300	Scandinavia. Czecho-Slovakia.
1925-26 . . .	6,350	..	..	..	..	..	300	..	6,650	Scandinavia. Czecho-Slovakia.
1926-27 . . .	6,650 2,550 60 ..	£13 5 3 £13 1 4	..	..	..	..	..	..	8,650 250	Scandinavia. Czecho-Slovakia.
	8,900	..	..	..	..	..	..	..	8,900	
	6,550 2,550 60 ..	£13 1 4	50 100	£13 1 8	..	..	..	..	6,400 2,550 60 100	Scandinavia. Czecho-Slovakia. Portugal. Germany.
	9,100	..	150	..	..	..	..	..	9 310	

Imports of Woodpulp—contd.

Years.	E. B. SULPHITE.		STRONG SULPHITE.		KRAFT.		MECHANICAL.		TOTAL.	Country of origin.
	Tons.	Average price f.o.b.	Tons.	Average price f.o.b.	Tons.	Average price f.o.b.	Tons.	Average price f.o.b.		
1927-28	6,850	{ £13 9 0 }	1,505	{ £10 5 1 }	50	{ £10 12 6 }	80	{ £5 12 6 }	8,485	Scandinavia.
	2,200		..		..		..		2,200	Czecho-Slovakia.
	100		..		..		..		100	Portugal.
1928-29	9,159	{ .. }	1,565	{ .. }	50	{ .. }	80	{ .. }	10,785	..
	6,400		4,100		..		100		10,500	Scandinavia.
	2,400		..		..		..		2,500	Czecho-Slovakia.
1929-30	8,800	{ .. }	4,100	{ .. }	..	{ .. }	100	{ .. }	13,000	Finland.
	7,575		3,445		110		..		11,130	Scandinavia.
	50		25		..		..		75	Finland.
1930-31	7,625	{ .. }	3,970	{ .. }	110	{ .. }	..	{ .. }	11,765	Czecho-Slovakia.
	6,750		3,373		..		..		10,123	Scandinavia.
	200		..		..		..		200	Czecho-Slovakia.
1930-31	50	{ .. }	50	{ .. }	..	{ .. }	..	{ .. }	100	Germany.
	7,000		3,423		..		..		10,423	..

ANNEXURE D.

(Reference Question No. 25.)

Declared Values of Paper Imported in six years to 1929-30.

	1924-25.		1925-26.		1926-27.		1927-28.		1928-29.		1929-30.	
	Ra.	Average Rs.	Ra.	Average Rs.	Ra.	Average Rs.	Ra.	Average Rs.	Ra.	Average Rs.	Ra.	Average Rs.
Packing	28,23,049	402,967	35,34,131	401,378	40,03,013	385,882	49,18,006	399,448	42,92,252	369,530	49,53,234	345,760
Old News	37,38,319	145,460	34,83,701	123,238	35,28,743	116,474	38,05,529	108,350	38,07,797	104,074	45,99,002	100,787
Newsprint	52,47,858	235,454	37,40,240	274,291	59,28,205	284,163	37,74,177	248,389	41,20,330	250,017	62,02,303	259,392
Not protected.												
	1,18,16,126	233,972	1,07,58,072	212,153	1,37,60,861	214,640	1,24,97,703	199,561	1,22,40,579	187,282	1,57,60,539	187,910
Newsprint pro- tected.												
Printing pro- tected.	..	..	11,679	315,648	6,085	346,750	1,93,434	236,761	1,32,924	282,216	1,26,928	334,902
Printing not pro- tected.	..	..	22,98,393	459,690	32,88,854	429,186	30,11,557	440,672	35,13,051	429,994	34,50,649	422,304
Writing . . . . .	..	..	24,00,166	657,710	54,76,731	599,008	53,48,707	559,795	58,82,303	564,304	63,73,804	552,036
	..	..	47,05,238	..	87,72,520	..	90,48,693	..	95,28,278	..	99,51,381	..
Printing not pro- tected.	61,29,066	525,289	30,05,032	472,712	7,77,684	444,291	14,22,332	348,099	28,57,518	308,894	25,50,611	326,270
Writing not pro- tected.	54,93,714	661,735	27,79,850	672,598	3,82,413	894,095	4,75,482	941,509	4,82,209	915,007	5,35,984	762,720
Other	21,15,541	1,081,565	21,87,345	918,666	24,40,868	995,054	22,89,738	973,195	30,18,967	807,642	33,59,767	751,794
P. M/s.	20,52,757	1,292,669	17,51,734	1,214,836	16,19,239	1,257,153	12,16,127	1,340,073	12,68,808	1,061,386	13,36,886	1,124,482
	2,76,08,204	..	2,51,87,331	..	2,77,53,585	..	2,69,52,110	..	2,93,87,359	..	3,35,00,489	..
Protected . . . . .	..	..	47,05,238	542,390	87,72,520	521,367	90,48,693	500,204	95,28,278	499,778	99,51,373	495,192
Not protected	2,76,08,204	..	2,04,82,093	..	1,89,81,065	..	1,79,03,412	..	1,96,59,081	..	2,35,40,786	..
	2,76,08,204	372,971	2,51,87,331	341,769	2,77,53,585	319,716	2,69,52,110	304,306	2,93,87,359	285,829	3,34,92,059	283,453

ANNEXURE D (ii).

(Reference Question No. 25.)

Abstract showing quantities of various classes of paper imported in six years, 1924-25—1929-30, exclusive of Government Stores.

	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1. Packing	7,036	8,805	10,376	12,312	11,426	14,343
2. Old Newspapers	25,700	28,268	32,872	33,120	37,452	45,631
3. Newsprint Not Protected	17,762	13,636	20,862	15,194	16,481	23,922
4. Total to this point	50,498	50,709	64,110	62,626	65,359	83,896
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
5. Percentage of grand total	68	68	73	70	65	71
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
6. Newsprint Protected	..	37	20	817	471	375
7. Printing Protected	..	4,989	7,663	6,834	8,170	8,171

8. Writing Protected . . . . .	..	3,649	9,143	10,439	10,424	11,546
9. Total—6, 7 & 8 . . . . .	..	8,675	16,826	18,090	19,065	20,092
10. Percentage of grand total	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
	..	11.77	19.38	20.41	19.20	17.00
11. Printing Not Protected	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
	11,735	6,357	1,750	4,086	9,463	7,817
12. Writing Not Protected	8,305	4,133	409	505	527	700
13. Other kinds	1,956	2,381	2,453	2,353	3,738	4,469
14. Paper Manufactured	1,588	1,442	1,258	909	1,187	1,188
GRAND TOTAL	74,082	73,697	86,806	88,569	99,339	118,162
Summary of Printing other than News and Writings included above—						
Printing	11,735	11,346	9,413	10,920	17,633	15,988
Writing	8,305	7,782	9,552	10,944	10,951	12,246
Total of these two qualities	20,040	19,128	18,965	21,864	28,584	28,234

ANNEXURE D (iii).

(Reference Question No. 25.)

Statement of Imports of Paper for the year 1930-31 with comparative figures showing the reduction as compared with the figures for 1929-30.

	1930-31.		Average value.	Reduction as compared with 1929-30.			
	Tons.	Rs.		Tons.	Per cent.	Rs.	Per cent.
1. Packing	11,568	38,54,055	333-165	2,775	19-3	11,05,179	23-3
2. Old Newspapers	41,135	36,38,457	89-667	4,496	9-9	9,10,545	20-2
3. Newsprint Not Protected	21,332	51,89,099	243-254	2,590	10-8	10,13,204	16-3
4. Total to this point	74,035	1,27,31,611	171-967	9,861	11-8	30,28,928	19-2
5. Percentage of grand total	Per cent. 74-5	..	..	Per cent. 52-2	..	..	..
6. Newsprint Protected	209	63,032	349-435	165	44-2	63,788	50-3
7. Printing Protected	6,609	27,34,818	413-802	1,562	19-1	7,15,831	20-7
8. Writing Protected	7,362	42,51,752	577-627	4,184	36-2	21,22,052	33-3
9. Total—6, 7 & 8	14,180	70,49,602	497-151	5,912	29-4	29,01,671	20-2
10. Percentage of grand total	Per cent. 14-3	..	..	Per cent. 31-3	..	..	..
11. Printing Not Protected	6,011	19,00,425	316-158	1,806	23-1	6,50,186	25-5
12. Writing Not Protected	505	4,03,697	799-400	195	27-8	1,30,287	24-4
13. Other kinds	3,487	26,62,908	763-667	982	22-0	6,96,859	20-7
14. Paper Manufactured	1,052	12,32,219	1,171-311	136	11-4	1,03,666	7-76
GRAND TOTAL	99,270	2,59,80,462	261-715	18,892	16-0	75,11,597	22-4

ANNEXURE D (iv).
(Reference Question 25.)

	Production of Indian Mills including Indian States (Travancore).		Average value per ton of paper.
	Quantity. Tons.	Value. Rs.	Rs.
1924	25,670	1,36,12,912	530-30
1925	28,596	1,41,73,747	495-65
1926	32,144	1,58,30,192	492-47
1927	33,943	1,64,98,612	486-07
1928	38,142	1,82,33,767	475-43
1929	40,787	1,87,00,984	458-50

ANNEXURE E.
(Reference Question No. 28.)
Cost of Imported Paper.

Quality.	C. I. F. Price Sterling.	C. I. F. Price at Re. 1-5½.	Port Comm. charges Toll Re. 1-4-0 per ton, Diff. Toll Re. 0-12-0, Riverside dues Re. 0-12-0.	Duty as per Tariff.	Miscellaneous expenses, Sincars' fees, Filing documents, Samples, Appraise- ments.	Total cost per ton ex wharf.	REMARKS.
White Printing	£ s. d. 22 0 0	Rs. A. P. 297 7 6	Rs. A. P. 2 12 0	Re. 0-1-0 per lb. Rs. 140.	Re. 1	Rs. A. P. 441 3 6	
Cream Laid	22 10 0	304 3 8	2 12 0	Re. 0-1-0 per lb. Rs. 140.	Re. 1	447 15 8	
Banks	28 15 0	338 11 8	2 12 0	Re. 0-1-0 per lb. Rs. 140.	Re. 1	532 7 8	
Banks	24 10 0	331 4 3	2 12 0	Re. 0-1-0 per lb. Rs. 140.	Re. 1	475 0 8	
Banks	26 15 0	361 11 1	2 12 0	Re. 0-1-0 per lb. Rs. 140.	Re. 1	505 7 1	
Azure Laid	25 10 0	344 12 8	2 12 0	Re. 0-1-0 per lb. Rs. 140.	Re. 1	488 8 8	
Glazed white Account Book	22 12 6	305 14 9	2 12 0	Re. 0-1-0 per lb. Rs. 140.	Re. 1	449 10 9	
Kraft	15 12 6	211 4 3	2 12 0	20% of Rs. 2-6-0 per lb. Rs. 70.	Re. 1	285 0 3	
Brown Wrapping	11 0 0	143 11 9	2 12 0	20% Invoice Rs. 29-12-0.	Re. 1	182 3 9	
* Badami Lt.	16 16 6	227 7 10	2 12 0	20% Invoice Rs. 45-8-0.	Re. 1	276 11 10	
Badami Hy.	14 15 0	199 6 10	2 12 0	20% Invoice Rs. 39-14-0.	Re. 1	243 0 10	
Ungl. White Newspaper	12 17 6	174 1 4	2 12 0	20% of Re. 1-10-0 per lb. Rs. 51-5-4.	Re. 1	229 2 8	
* Badami Lt.	15 17 6	207 14 3	2 12 0	20% of Invoice Rs. 41-9-3.	Re. 1	253 3 6	* Later price re- ceived.

ANNEXURE F (i).

(Reference Question No. 30.)

(1) The following statement shows the average net prices ex-factory for the different classes of paper sold by us in the past seven Calendar Years.

	RATE.					
	1924.	1925.	1926.	1927.	1928.	1929.
	As. P.	As. P.	As. P.	As. P.	As. P.	As. P.
Cream Laid Heavy Wt.	4 2-35	3 11-23	3 8-97	3 7-49	3 7-35	3 6-66
Cream Laid Light Wt.	4 2-19	..	4 0-63	3 11-43	4 0-15	3 10-31
Cream Wove	..	..	..	..	3 3-75	3 5-63
Unbleached	3 5-25	3 4-84	3 3-75	3 4-03	3 3-02	3 2-71
Radami	3 3-91	3 0-12	2 11-75	2 11-39	3 3-68	2 9-47
S. Badami and Manila	4 1-54	3 5-04	3 7-17	3 5-46	2 10-95	3 1-89
Manilla	..	..	..	..	3 2-56	3 0-89
Colour	4 7-03	3 11-97	3 10-47	3 7-08	3 5-48	3 4-09
Brown	2 9-18	2 7-13	2 7-32	2 6-41	2 4-92	2 5-37
White Ptg. Light Wt.	..	..	..	..	3 6-55	3 7-38
White Ptg. and P. Bds.	3 9-26	3 7-58	3 7-34	3 0-84	3 6-42	3 4-24
White Ptg. Heavy Wt.	..	..	..	..	3 6-49	3 5-80
Pulp Boards	..	..	..	..	..	..
Indian Account Book	3 11-49	3 8-64	3 8-86	3 8-23	3 6-43	..
Buff Account Book	..	..	..	3 8-11	4 4-38	4 2-70
Typewriting and Banks	4 7-80	4 6-81	4 5-19	4 3-83	4 3-31	3 11-98
Bank	..	..	..	..	3 10-08	3 9-98
Azure Laid	4 8-09	4 4-20	4 0-03	3 11-06	4 5-68	4 4-02
Stamp Cap.	5 3-35	..	4 3-66	4 3-81	6 9-97	6 9-91
Cream Wove Stamp Cap.	..	..	..	..	3 11-42	3 10-13
Blotting	4 7-60	4 3-52	4 2-30	4 0-16	3 7-13	4 0-71
News Printing	3 4-90	3 2-78	3 3-63	2 9-80	3 8-45	3 5-87
Duplicating	..	..	..	4 3-67	4 2-76	3 6-51
Miscellaneous	5 0-80	3 7-91	3 9-80	4 5-90	3 7-75	3 6-57
Job Lot.	..	2 11-16	2 7-29	..	..	3 11-12
Target	..	..	..	..	..	3 8-55
White L. F.	..	..	..	..	..	4 0-01
	..	..	..	..	..	3 6-29

ANNEXURE F (ii).

(Reference Question No. 30.)

(2) The following statement shows the average price realised by us for :

(a) *Printing papers.*(b) *Writing papers.*(c) *Papers of all sorts.*

	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
	As. P.	As. P.	As. P.	As. P.	As. P.	As. P.	As. P.	As. P.
Printing Paper	4 0-97	3 10-27	3 4-24	3 5-43	3 5-55	3 4-34	3 5-16	3 4-23
Writing Paper	4 6-58	4 2-58	3 9-97	3 8-66	3 7-88	3 7-24	3 7-62	3 6-36
GRAND TOTAL	3 11-77	3 7-54	3 5-22	3 5-87	3 5-35	3 5-25	3 4-24	3 3-43

We enclose average samples of our own and Imported papers in the following qualities :—

White M. F. Printing.

White I. F. Printing.

White Antique Wove.

White Antique Laid.

Cream Laid.

Azure Laid.

ANNEXURE G.

District sales.

	RATE.				
	1925.	1926.	1927.	1928.	1929.
	As. P.	As. P.	As. P.	As. P.	As. P.
Calcutta	3 6-46	3 8-71	3 7-60	3 7-26	3 5-49
Delhi	3 4-38	3 6-91	3 3-95	3 5-81	2 10-83
Lahore	3 11-48	3 7-20	3 5-99	3 5-51	3 7-06
Mofussil	3 6-37	3 6-86	3 6-27	3 7-11	3 5-48
Central Government	3 1-99	3 6-16	3 3-98	3 4-82	3 3-77
Southern India	3 7-47	3 7-43	3 7-73	3 8-75	3 7-73
Madras Government	3 4-63	3 6-03	3 5-58	3 5-46	3 4-64
Bombay	3 0-17	3 5-77	3 7-00	3 7-04	3 7-11
Rangoon	3 5-73	3 4-17	3 6-59	3 7-85	3 7-07
Rangoon Government	3 4-62	3 5-55	3 5-37	3 4-86	3 5-38
United Provinces	3 9-74	3 8-66	3 6-74	3 7-11	3 5-76
Lucknow	3 1-10	3 2-86	3 4-04	3 4-53	3 4-47
Railways	3 3-61	3 4-05	3 4-67	3 3-44	3 1-26
					As. P.
					3 6-23
					3 1-70
					2 11-33
					3 3-48
					3 4-16
					3 4-45
					3 2-08
					3 2-10
					3 3-70
					3 3-47
					3 4-30
					2 10-93
					3 2-79

<i>Less</i> —Depreciation up to 31st March 1924	13,85,111 15 6	12,06,447 6 2
Railway Sidings— Net Outlay up to 31st March 1924	56,961 9 3	
<i>Less</i> —Depreciation up to 31st March 1924	56,461 9 3	500 0 0
		15,84,791 12 11
Forest Block— As at 31st March 1924	2,09,458 15 0	
Additions since	122 8 0	
<i>Less</i> —Sold	2,09,579 7 0	
	1,000 0 0	
<i>Less</i> —Amount written-off	2,08,579 7 0	2,73,579 7 0
	25,000 0 0	
Bamboo Mill Block— Expenditure to date	30,47,265 5 3	
<i>Less</i> —Development Reserve	14,86,762 9 1	15,90,532 12 2
		30,74,990 6 1
Block No. 1 Mill as above . . . . .	..	16,84,791 12 11
Block No. 2 Mill as above . . . . .	..	2,73,579 7 0
Forest Block as above . . . . .	..	15,90,532 12 2
Bamboo Mill Block as above . . . . .	..	[ 64,93,894 6 2
Note— Total Expenditure to date	Rs. A. P. 1,37,28,850 9 1	
Total Depreciation to date	57,48,193 9 10	
<i>Less</i> —Development Reserve	79,80,656 15 3	
	14,86,762 9 1	
	64,93,894 6 2	
Carried over . . . . .	..	1,57,81,394 3 10
Carried over . . . . .	..	64,93,894 6 2

Balance Sheet as at 30th September 1924—contd.

CAPITAL AND LIABILITIES.		RS.	A. P.	RS.	A. P.		
Brought forward		..	1,57,81,394	3 10	64,93,894	6 2	
PROPERTY AND ASSETS.							
Brought forward		..					
Flotilla—							
As at 31st March 1924		..			16,400	0 0	
Furniture and Fittings—							
As at 31st March 1924		79,896	5 1				
Additions since		448	3 9				
Live Stock—							
As at 31st March 1924		..				1 0 0	
Motor Cars—							
As at 31st March 1924		5,206	4 0				
Less—Sold		1,093	8 0				
Less—Amount written-off		4,112	12 0				
		3,412	12 0			500 0 0	
Stocks—							
Paper (at or under market rate)		10,80,390	5 0				
Raw Materials, Chemicals, Stores, etc. (at or under cost)		17,00,767	15 11				
Machinery for erection		2,11,303	9 11				
Insurance Premiums, etc., Paid in Advance		..				29,92,461	14 10
Debentures, Fourth Issue—						31,631	1 9
Underwriting Commission and Brokerage, etc., as at 31st March 1924		..				1,20,000	0 0
Debts due to the Company—							
Bills outstanding (account Government)		8,98,623	7 6				
Bills outstanding (Sundry Buyers)		14,33,540	10 9				
Sundry Debtors		4,08,298	16 2				
		22,41,463	1 5				
Less—Provision for Bad and Doubtful Debts, etc.		68,305	12 6				
						21,73,157	4 11

Investment Account—				
3½ per cent. and 8 per cent. Government Securities for Rs. 32,100 (at or under market rate)		17,575	8	0
6 per cent. Ten-year Bond 1981 for Rs. 72,900		72,900	0	0
6 per cent. Five-year Bond 1926 for Rs. 10,118 (at cost)		10,118	12	0
Bhupara Power Supply Co., Ltd., 1,500 Deferred Ordinary Shares of Rs. 100 each (at cost)		1,50,000	0	0
Interest Accrued on Investments	..			2,50,594 4 0
Deposit with Managing Agents—				1,846 12 7
Trustees for Debenture Holders—Realisation of Assets Account	..			00,920 0 0
Cash and Other Balances—				
Cash at Office	8,898	1	2	
Cash at Mill	139	14	3	
Profit and Loss Account—				4,057 15 5
Balance at debit	..			35,55,584 15 4
Total				
			Total	
				1,57,81,394 3 10
				1,57,81,394 3 10

Abridged Balance Sheet as at 31st March 1925.

After Reconstruction.

CAPITAL AND LIABILITIES.		Rs.	A. P.	Rs.	A. P.	PROPERTY AND ASSETS.		Rs.	A. P.	Rs.	A. P.
Capital—											
Authorised	. . . . .	11,36,500	0 0			Block	. . . . .	..	..	61,68,686	5 2
						Plotilla, Furniture, Motor Car, etc.	. . . . .	..	..	26,901	0 0
						Stocks	. . . . .	..	..	34,23,316	9 6
Issued and Subscribed—						Insurance Premia, etc., Paid in Advance	. . . . .	..	..	21,082	2 9
175,000 Ordinary Shares of Rs. 2-8 each fully paid up	. . . . .	4,37,500	0 0			Debts Due to the Company	. . . . .	..	..	15,33,246	9 4
8,350 8 per cent. Cumulative Preference Shares of Rs. 40 each fully paid up	. . . . .	3,34,000	0 0			Investment	. . . . .	..	..	1,75,594	4 0
175,000 Deferred Shares of Re. 1 each fully paid up	. . . . .	1,75,000	0 0			Interest accrued on Investment	. . . . .	..	..	4,271	9 1
						Deposit with Managing Agents—					
Mortgage Debentures	. . . . .	..		9,40,500	0 0	Trustees for Debenture Holders—Realisation of Assets Account	. . . . .	..	..	60,920	0 0
Reserve for Grass Royalties	. . . . .	..		20,00,000	0 0	Cash Balance	. . . . .	..	..	2,011	9 9
Chartered Bank of India, Australia and China secured	. . . . .	..		2,00,000	0 0	Profit and Loss Account—					
Deposits	. . . . .	..		47,35,197	0 8	Balance at debit	. . . . .	..	..	2,039	1 6
Interest on Debentures	. . . . .	..		2,47,680	14 7						
Dividends Unclaimed	. . . . .	..		48,612	11 7						
				6,754	8 0						
Liabilities	. . . . .	..		122,83,234	0 3						
Total	. . . . .	..	..	1,14,18,029	3 1	Total	. . . . .	..	..	1,14,18,029	3 1

Balance Sheet as at 31st March 1925.

CAPITAL AND LIABILITIES.		RS.	A. P.	RS.	A. P.
Capital—					
Authorised—					
175,000 Ordinary Shares of Rs. 10 each		17,50,000	0 0		
8,500 6 per cent. Cumulative Preference Shares of Rs. 100 each		8,50,000	0 0		
		26,00,000	0 0		
Issued and Subscribed—					
175,000 Ordinary Shares of Rs. 10 each fully paid up		17,50,000	0 0		
8,500 6 per cent. Cumulative Preference Shares of Rs. 100 each fully paid up		8,55,000	0 0		
		25,85,000	0 0		
Mortgage Debentures—					
Third Issue (6 per cent.)		5,00,000	0 0		
Fourth Issue (6 per cent.)		23,50,000	0 0		
		1,00,000	0 0		
Debenture Redemption Fund					
Transferred to Debenture Fourth Issue, Underwriting Commission and Brokerage		1,00,000	0 0		
Chartered Bank of India, Australia and China—					
Secured by Mortgage		20,00,000	0 0		
Secured against Stock		27,36,137	0 8		
		47,35,197	0 8		
Loans and Deposits (unsecured)—					
Loans		30,00,000	0 0		
Deposits		2,47,680	14 7		
		32,47,680	14 7		
Interest on Debentures					
Dividends Unclaimed		..	..
		48,612	11 7		
		6,754	8 0		
Liabilities—					
Goods Supplied		5,63,165	14 2		
Expenses		3,06,751	1 0		
Other Finance		14,46,119	15 9		
		23,15,035	14 11		
		1,69,38,282	1 9		
			
Carried over					
PROPERTY AND ASSETS.					
Block—No. 1 Mill—					
Land and Buildings—					
Net Outlay up to 30th September 1924		21,50,545	4 1		
Additions since		4,388	0 0		
		21,54,933	4 1		
Less—Depreciation up to 30th September 1924		11,61,809	8 5		
		9,93,123	11 8		
Machinery and Plant—					
Net Outlay up to 30th September 1924		45,98,462	3 4		
Additions since		9,589	4 3		
Less—Transferred from Machinery for Erection		90,802	6 9		
		46,98,849	14 4		
Less—Sold		1,400	0 0		
		46,97,462	14 4		
Less—Depreciation up to 30th September 1924		25,25,943	8 11		
		21,71,519	5 5		
Railway Station—					
Net Outlay up to 30th September 1924		81,884	5 9		
Less—Depreciation up to 30th September 1924		68,148	5 9		
		13,736	0 0		
		31,78,379	1 1		
Block—No. 2 Mill—					
Land and Buildings—					
Net Outlay up to 30th September 1924		9,28,563	0 0		
Less—Depreciation up to 30th September 1924		5,50,718	10 0		
		3,77,844	6 9		
Machinery and Plant—					
Net Outlay up to 30th September 1924		25,91,550	5 8		
Additions since		16,987	3 4		
Less—Transferred from Machinery for Erection		18,612	13 0		
		26,26,159	6 0		
			
Carried over					
		35,56,223	7 10		

<i>Less—</i> Develo- ment Reserve.	14,01,788 11 10				
	<u>66,10,698 7 11</u>				
<i>Fleet</i> —					
As at 30th September 1924	.	.	.	16,400 0 0	
<i>Furniture and Fittings</i> —					
As at 30th September 1924	.	.	.	80,344 8 10	
<i>Live Stock</i> —					
As at 30th September 1924	.	.	.	1 0 9	
<i>Motor Cars</i> —					
As at 30th September 1924	.	.	.	500 0 0	
<i>Stocks</i> —					
Paper (under market rate)			12,87,835 3 1		
Raw Materials, Chemicals, Stores, etc. (at or under cost)			<u>21,35,981 6 5</u>		
Insurance Premiums, etc., Paid in Advance	.	.	.	34,28,316 9 6	
				21,082 2 9	
<i>Debentures, Fourth Issue</i> —					
Underwriting Commission and Brokerage, etc., as at 30th September 1924	.	.	1,20,000 0 0		
<i>Less</i> —Transferred from Debenture Redemption Fund	.	.	<u>1,00,000 0 0</u>		
				20,000 0 0	
<i>Debts due to the Company</i> —					
Bills outstanding (account Government)	.	.	35,089 5 9		
Bills outstanding (Sundry Buyers)	.	.	13,78,272 13 9		
Sundry Debtors	.	.	<u>4,67,870 15 0</u>		
			18,70,743 2 6		
<i>Less</i> —Provision for Bad and Doubtful Debts, etc.	.	.	<u>61,958 4 1</u>		
				18,08,784 14 5	
Carried over	1,59,38,262 1 9	Carried over		1,19,81,107 11 5	

Balance Sheet as at 31st March 1925—concl'd.

CAPITAL AND LIABILITIES.		PROPERTY AND ASSETS.	
	Rs. A. P.		Rs. A. P.
Brought forward .	1,59,38,282 1 9	Brought forward	1,19,81,107 11 5
		Investment Account—	
		3½ per cent. and 3 per cent Government Securities for Rs. 32,100 (at or under market rate)	17,375 8 0
		6 per cent. Ten-year Bond 1931 for Rs. 72,900	72,900 0 0
		6 per cent. Five-year Bond 1928 for Rs. 10,000 (at cost)	10,118 12 0
		Bhatpara Power Supply Co., Ltd., 1,500 Deferred Ordinary Shares of Rs. 100 each (at cost)	1,50,000 0 0
		Interest Accrued on Investments	2,50,594 4 0
		Deposit with Managing Agents—	4,271 9 1
		Trustees for Debenture Holders—Realisation of Assets Account	60,920 0 0
		Cash and Other Balances—	
		Cash at Office	1,008 12 6
		Cash at Mill	102 13 3
		Profit and Loss Account—	2,011 9 9
		Balance at debit	35,39,376 15 6
Total	1,59,38,282 1 9	Total	1,59,38,282 1 9

Balance Sheet as at 30th September 1925—contd.

CAPITAL AND LIABILITIES.		PROPERTY AND ASSETS.	
RS.	A. P.	RS.	A. P.
..	1,04,40,652 7 5	..	9,18,000 0 0
Brought forward		Brought forward	
		Block—No. 2 Mill— Land and Buildings—	
		Rs. A. P.	
		As at 31st March 1925 9,28,563 0 9	
		Transferred to Machinery and Plant 27,860 2 5	
		Less—Depreciation—	
		As at 31st March 1925 5,50,718 10 0	
		Since added 9,984 4 4	
		5,60,702 14 4	
		3,40,000 0 0	
		Machinery and Plant—	
		Rs. A. P.	
		As at 31st March 1925 28,26,169 6 0	
		Transferred from Land and Buildings 27,860 2 5	
		26,54,019 8 5	
		Transferred to Stores 375 0 0	
		26,53,644 8 5	
		Less—Depreciation—	
		As at 31st March 1925 13,85,111 15 6	
		Since added 10,532 8 11	
		13,95,644 8 5	
		Railway Sidings—	
		Rs. A. P.	
		As at 31st March 1925 56,961 9 3	
		Less—Depreciation—	
		As at 31st March 1925 56,461 9 3	
		29,46,492 14 5	
		Bamboo Mill Block—	
		Rs. A. P.	
		As at 31st March 1925 29,41,134 14 5	
		Since added 4,358 0 0	
		29,45,492 14 5	
		Transferred to Machinery and Plant 16,988 10 0	
		Sold 30,545 0 11	
		47,483 10 11	
		28,98,009 3 6	

<i>Less—Development Reserve</i>	Rs. A. P.	13,55,362 11 0	
	55,646 8 6	15,42,646 8 6	
<i>Less—Depreciation</i>			
Transferred from Reserve	1,00,000 0 0		
for Block		1,55,646 8 6	13,87,000 0 0
			30,72,000 0 0
			15,98,500 0 0
			13,87,000 0 0
Block No. 1 Mill as above			
Block No. 2 Mill as above			
Bamboon Mill Block as above			
<i>Note—</i>	Rs. A. P.		
Total Expenditure to date	1,34,78,007 10 6		
Total Depreciation to date	60,65,144 15 6		
	74,12,862 11 0		
<i>Less—Development Reserve</i>	13,55,362 11 0		
	60,57,500 0 0		
<i>Flotilla—</i>			
As at 31st March 1925	16,400 0 0		
<i>Less—Depreciation</i>	1,400 0 0		
			15,000 0 0
Furniture and Fittings—			
As at 31st March 1925 after reconstruction			10,000 0 0
<i>Motor Car—</i>			
As at 31st March 1925			500 0 0
<i>Live Stock—</i>			
As at 31st March 1925			1 0 0
<i>Stock—</i>			
Paper (at or under market rate)	8,92,711 7 2		
Raw Materials, Chemicals, Stores, etc. (at or under cost)	15,39,713 0 8		
Insurance Premiums, etc., paid in advance			24,32,424 7 10
			40,016 7 3
<i>Carried over</i>	1,04,40,652 7 5		85,55,441 15 1

Balance Sheet as at 30th September 1925—concl'd.

CAPITAL AND LIABILITIES,		PROPERTY AND ASSETS.	
Brought forward	Rs. A. P.	Brought forward	Rs. A. P.
	1,04,40,652 7 5		85,55,441 15 1
			..
		Debts due to the Company—	
		Bills outstanding (account Governments)	Rs. A. P.
		Bills outstanding (Sundry Buyers)	2,12,508 7 5
		Sundry Debtors	14,33,946 11 5
		Less—Provision for Bad and Doubtful debts, etc.	1,35,573 1 2
			17,82,128 4 0
			1,04,255 10 7
			16,77,872 9 15
		Investments—	
		34 per cent. and 3 per cent. Government Securities for Rs. 32,100 (at under market rate)	17,575 8 0
		6 per cent. Ten-year Bonds 1931 for Rs. 72,900 (at under market rate)	72,900 0 0
		5 per cent. Loan 1946-55 for Rs. 10,000 (at under market rate)	10,000 0 0
		Madras Power Supply Co., Ltd., 4,500 Deferred Ordinary Shares of Rs. 100 each (at cost)	
		Less—Reserve	Rs. A. P. 1,50,000 0 0 75,000 0 0
			75,000 0 0
			1,75,475 8 0
		Interest accrued on investments	8,112 2 1
		Trustees for Debenture Holders—Realisation of Assets Account—	
		Deposited with Managing Agents	639 15 0
		Investment 8 per cent. Titaghur Paper Mills Co., Ltd., Debentures for Rs. 30,000 (at cost)	24,868 15 4
			25,508 14 4
		Cash and other Balances—	
		Cash at Office	3,073 8 6
		Cash at Mills	167 14 0
			3,241 6 6
Total	..	Total	1,04,40,652 7 5

Balance Sheet as at 31st March 1926—contd.

CAPITAL AND LIABILITIES.		Rs.	A. P.	PROPERTY AND ASSETS.		Rs.	A. P.
Brought forward	..	1,06,59,745	5 7	Brought forward	.	..	29,42,000 0 0
				Block—No. 2 Mill— Land and Buildings—			
				As at 30th September 1925	Rs. A. P.		
				Since added	9,00,702 14 4 2,500 0 0		
					9,08,202 14 4		
				Less—Depreciation—			
				As at 30th September 1925	5,60,702 14 4		
				Since added	10,500 0 0		
					5,71,202 14 4		3,32,000 0 0
				Machinery and Plant—			
				As at 30th September 1925	26,53,644 8 5		
				Transferred from No. 1 Mill	750 0 0		
					26,54,394 8 5		
				Less—Sold	4,202 5 0		
				Less—Depreciation—			
				As at 30th September 1925	13,95,644 8 5		
				Since added	14,547 11 0		
					26,50,192 3 5		
					14,10,192 3 5		12,40,000 0 0
				Railway Sidings—			
				As at 30th September 1925	56,981 9 3		
				Less—Depreciation—			
				As at 30th September 1925	56,461 9 3		500 0 0
				Bamboo Mill Block—			
				As at 30th September 1925	Rs. A. P.		
				Transferred to Machinery and Plant	28,98,000 3 6 175 0 0		

Balance Sheet as at 31st March 1936—consolid.

CAPITAL AND LIABILITIES.		PROPERTY AND ASSETS.	
Rs.	A. P.	Rs.	A. P.
Brought forward		Brought forward	
Rs.	A. P.	Rs.	A. P.
1,06,59,746	5 7	57,67,002	8 2
Furniture and Fittings—		Furniture and Fittings—	
As at 30th September 1925		As at 30th September 1925	
Less—Amount written-off		Less—Amount written-off	
		10,000	0 0
		1,000	0 0
		9,000	0 0
Motor Car—		Motor Car—	
As at 30th September 1925		As at 30th September 1925	
Since added		Since added	
Less—Amount written-off		Less—Amount written-off	
		3,452	0 0
		552	0 0
		2,900	0 0
Live Stock—		Live Stock—	
As at 30th September 1925		As at 30th September 1925	
Paper (at or under market rate)		Paper (at or under market rate)	
Raw Materials, Chemicals, Stores, etc. (at or under cost)		Raw Materials, Chemicals, Stores, etc. (at or under cost)	
		7,19,642	13 11
		21,00,579	7 6
Insurance Premium, etc., paid in advance		Insurance Premium, etc., paid in advance	
		22,20,522	5 5
Debts due to the Company—		Debts due to the Company—	
Bills outstanding (account of Government)		Bills outstanding (account of Government)	
Bills outstanding (account of Buyers)		Bills outstanding (account of Buyers)	
Sundry Debtors		Sundry Debtors	
		20,30,586	5 11
Less—Provision for Bad and Doubtful debts, etc.		Less—Provision for Bad and Doubtful debts, etc.	
		1,74,983	14 7
Investments—		Investments—	
3½ per cent. and 3 per cent. Government Securities for Rs. 32,100 (at or under market rate)		3½ per cent. and 3 per cent. Government Securities for Rs. 32,100 (at or under market rate)	
6 per cent. Ten-year Bonds 1931 for Rs. 72,900 (at or under market rate)		6 per cent. Ten-year Bonds 1931 for Rs. 72,900 (at or under market rate)	
5 per cent. Loan 1945-56 for Rs. 10,000 (at or under market rate)		5 per cent. Loan 1945-56 for Rs. 10,000 (at or under market rate)	
		17,575	8 0
		72,900	0 0
		10,000	0 0
		19,46,662	7 4

Bhadrapara Paper Supply Co., Ltd., 1,500 De-ferred Ordinary Shares of Rs. 100 each (at cost)	Rs.	A. P.
Less—Transferred from Reserve	1,50,000 0 0	
	75,000 0 0	
Less—Amount written-off	75,000 0 0	
	60,000 0 0	
Interest accrued on investments	..	1,15,475 8 0
Trustees for Debenture Holders—Realisation of Assets Account—Deposited with Managing Agents	34,009 1 7	1,533 1 6
Investment 8 per cent. Titagbur Paper Mills Co., Ltd., Debentures for Rs. 38,000 (at cost)	32,250 0 0	60,859 1 7
Cash and other Balances—Cash at Office	8,685 15 8	
Cash at Mills	286 15 9	8,922 15 5

Total 1,06,59,745 5 7

Total ..

Total 1,06,59,745 5 7

Total

Balance Sheet as at 30th September 1926.

CAPITAL AND LIABILITIES.		RS.	A.	P.	RS.	A.	P.	PROPERTY AND ASSETS.		RS.	A.	P.	RS.	A.	P.
Capital—								Block—No. 1 Mill—							
Authorised—								Land and Buildings—							
175,000 Ordinary Shares of Rs. 2-8 each		4,37,500	0	0				As at 31st March 1926					1,21,54,933	4	1
8,350 8 per cent. Cumulative Preference Shares of Rs. 40 each		3,34,000	0	0				Less—Depreciation—							
150 8 per cent. Cumulative Preference Shares of Rs. 100 each		15,000	0	0				As at 31st March 1926							
350,000 Deferred Shares of Rs. 1 each		3,50,000	0	0				Since added					12,54,933	4	1
		11,36,500	0	0									50,000	0	0
Issued and Subscribed—													13,04,933	4	1
175,000 Ordinary Shares of Rs. 2-8 each															8,50,000 0 0
Fully paid up		4,37,500	0	0				Machinery and Plant—							
8,350 8 per cent. Cumulative Preference Shares of Rs. 40 each fully paid up		3,34,000	0	0				As at 31st March 1926					47,28,491	13	8
175,000 Deferred Shares of Rs. 1 each fully paid up		1,75,000	0	0				Less—Sold					3,567	1	6
													47,24,924	12	2
Mortgage Debentures—															
Third Issue (8 per cent.)		5,00,000	0	0											
Fourth Issue (8 per cent.)		25,00,000	0	0											
Reserve for Grass Royalties															
Reserve															
Chartered Bank of India, Australia and China—															
Secured by Mortgage		20,00,000	0	0											
Secured by hypothecation of Stock		17,45,963	13	5									27,84,924	12	2
Deposits (unsecured)													81,884	5	9
Interest on Debentures															
Dividends Unclaimed															
Liabilities															
Goods Supplied		2,81,436	0	10									69,884	5	9
Expenses		2,02,370	5	0									2,000	0	0
Other Finance		10,12,406	7	2									71,884	5	9
Profit and Loss Account—								Block—No. 2 Mill—							
Balance at Credit								Land and Buildings—							
								As at 31st March 1926					9,03,202	14	4
								Less—Depreciation—							
								As at 31st March 1926					5,71,202	14	4
								Since added					12,000	0	0
													5,83,202	14	4

Balance Sheet as at 30th September 1926—contd.

CAPITAL AND LIABILITIES.		PROPERTY AND ASSETS.	
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Brought forward	99,53,476 13 3	Brought forward	54,60,500 0 0
		Note—	
		Total Expenditure to	Rs. A. P.
		Rate	1,34,34,692 15 0
		Total Depreciation	66,12,847 8 9
		to date	68,22,345 6 3
		Less—Development	13,61,845 0 3
		Reserve	54,60,500 0 0
		Flotilla—	
		As at 31st March 1926	16,400 0 0
		Less—Depreciation—	
		As at 31st March	3,400 0 0
		1926	3,000 0 0
		Since added	
			6,400 0 0
			10,000 0 0
		Furniture and Fittings—	
		As at 31st March 1926	9,000 0 0
		Less—Amount written-off	1,500 0 0
			7,500 0 0
		Motor Car—	
		As at 31st March	2,900 0 0
		1926	425 0 0
		Less—Sold	
			2,475 0 0
		Less—Amount written-off	975 0 0
			1,500 0 0
		Live Stock—	
		As at 31st March 1926	1 0 0
		Stock—	
		Paper (at or under market rate)	6,23,899 0 0
		Raw Materials, Chemicals, Stores, etc. (at	18,25,164 6 5
		or under cost)	
		Insurance, Premium, etc., Paid in Advance	24,49,063 6 5
			39,071 14 0

		Rs. A. P.	
Debits due to the Company—			
Bills outstanding (account Government)	2,36,283 11 9		
Do. (Sundry Buyers)	16,83,975 5 11		
Sundry Debtors	67,846 0 7	19,88,110 2 3	
		1,86,263 15 6	17,99,841 2 9
Less—Provision for Bad and Doubtful Debts, Discounts, etc.			
Investments—			
3½ per cent. and 3 per cent. Government Securities for Rs. 32,100 (at or under market rate)	17,575 8 0		
6 per cent. Ten-year Bonds, 1931 for Rs. 72,900 (at or under market rate)	72,900 0 0		
5 per cent. Loan, 1945-55 for Rs. 10,000 (at or under market rate)	10,000 0 0		
Bhatpara Power Supply Co., Ltd. 1,500 Deferred Ordinary Shares of Rs. 10 each	15,000 0 0		
	--		1,15,475 8 0
Interest Accrued on Investments			1,349 14 6
Trustees for Debenture Holders—Realisation of Assets Account—			
Deposited with Managing Agents Investment 8 per cent. Tilaghur Paper Mills Co., Ltd.	35,892 5 3		
Debentures for Rs. 39,000 (at cost)	32,250 0 0		68,142 5 3
Cash and other Balances—			
Cash at—			
Office	410 1 7		
Mills	131 8 9		541 10 4
Total	--		99,58,476 13 3

Balance Sheet as at 31st March 1927.

CAPITAL AND LIABILITIES.			PROPERTY AND ASSETS.		
	Rs.	A. P.		Rs.	A. P.
Capital—			Block—No. 1 Mill—		
Authorised—			Land and Buildings	21,54,933	4 1
175,000 Ordinary Shares of Rs. 2-8 each	4,37,500	0 0	As at 30th September 1926	200	0 0
8,350 8 per cent. Cumulative Preference Shares of Rs. 40 each	3,34,000	0 0	Less—Sold	21,54,733	4 1
150 8 per cent. Cumulative Preference Shares of Rs. 100 each	15,000	0 0			
350,000 Deferred Shares of Rs. 1 each	3,50,000	0 0	Less—Depreciation—		
			As at 30th September 1926	13,04,933	4 1
			Since added	9,800	0 0
	11,36,500	0 0		13,14,733	4 1
					8,40,000 0 0
Issued and Subscribed—			Machinery and Plant—		
175,000 Ordinary Shares of Rs. 2-8 each fully paid up	4,37,500	0 0	As at 30th September 1926	47,24,924	12 2
8,350 8 per cent. Cumulative Preference Shares of Rs. 40 each fully paid up	3,34,000	0 0	Since added	1,35,760	1 3
188,790 Deferred Shares of Rs. 1 each fully paid up	1,88,790	0 0		48,60,684	13 5
			Less—Sold	4,671	14 0
				48,56,012	15 5
Mortgage Debentures—			Less—Depreciation—		
Third Issue (6 per cent.)	5,00,000	0 0	As at 30th September 1926	27,54,924	12 2
Fourth Issue (8 per cent.)	25,00,000	0 0	Since added	1,29,088	3 3
				29,14,012	15 5
Reserve					19,42,000 0 0
Chartered Bank of India, Australia and China—			Railway Siding—		
Secured by Mortgage	20,00,000	0 0	As at 30th September 1926	81,854	5 9
Secured by hypothecation of Stocks	15,46,178	0 8			
			Less—Depreciation—		
Deposits (Unsecured)			As at 30th September 1926	71,884	5 9
Interest on Debentures			Since added	2,000	0 0
Dividends Unclaimed				73,884	5 9
Goods supplied	4,61,986	5 10			
Expenses	2,76,139	5 11	Block—No. 2 Mill—		
Other Finance	9,87,723	5 6	Land and Buildings		
			As at 30th September 1926	9,03,202	14 4
			Less—Depreciation—		
Profit and Loss Account—			As at 30th September 1926	5,83,202	14 4
Balance at credit.					3,20,000 0 0

Machinery and Plant—					
As at 30th September 1926				26,45,693	2 2
Less—Sold				3,437	14 0
				26,42,253	4 2
Rs. A. P.					
Less—Depreciation—					
As at 30th September 1926				14,25,693	2 2
Since added				37,062	2 0
				14,62,755	4 2
				11,79,500	0 0
Railway Siding—					
As at 30th September 1926				56,961	9 3
Less—Depreciation—					
As at 30th September 1926				56,461	9 3
				500	0 0
Bamboo Mill Block—					
Net Expenditure to date				27,35,563	6 2
Rs. A. P.					
Less—Written off—					
To 30th September 1926				17,44,428	3 9
This half year				1,20,135	2 5
				18,64,563	6 2
				8,71,000	0 0
Block No. 1 Mill as above					
Block No. 2 Mill as above					
Bamboo Mill Block as above					
Note—					
Total Expenditure to date				1,34,30,613	11 2
Total Depreciation to date				82,69,613	11 2
				51,61,000	0 0
Carried over					
99,35,151 8 7					
Carried over					
1,03,22,000 0 0					

Balance Sheet as at 31st March 1927—contd.

CAPITAL AND LIABILITIES.		Rs.	A. P.	Rs.	A. P.	Rs.	A. P.
Brought forward		..	99,35,151 8 7	..		1,03,22,000 0 0	
PROPERTY AND ASSETS.							
Floodilla—							
As at 30th September 1926	Brought forward	..		16,400 0 0			
Less—Depreciation—							
As at 30th September 1926	Rs. A. P.						
Since added	6,400 0 0						
	5,000 0 0						
				11,400 0 0		5,000 0 0	
Furniture and Fittings—							
As at 30th September 1926				7,500 0 0			
Less—Amount written off				1,600 0 0		6,000 0 0	
Motor Car—							
As at 30th September 1926				1,500 0 0			
Less—Amount written off				500 0 0		1,000 0 0	
Live Stock—							
As at 30th September 1926				..		1 0 0	
Stocks—							
Paper (at or under market rate)				6,16,076 9 4			
Raw Materials, Chemicals, Stores, etc.							
(at or under cost)				21,65,702 1 5		47,81,778 10 9	
Insurance, Premium, etc. paid in Advance				..		21,231 10 3	
Debts due to the Company—							
Bills outstanding							
(account Govern-	Rs. A. P.						
ment).	1,14,545 3 2						
Do. (Sundry Buyers)	18,02,805 15 11						
Sundry Debtors	78,215 5 9			19,95,566 8 10			
Less—Provision for Bad and Doubtful							
Debts, Discounts, etc.				2,28,547 10 8		17,67,018 14 2	

Investments—			
3½ per cent. and 3 per cent. Government securities for Rs. 32,100 (at or under market rate)	17,575	8	0
6 per cent. Ten-year Bonds, 1931 for Rs. 72,900 (at or under market rate)	72,900	0	0
5 per cent. Loan, 1945-55 for Rs. 10,000 (at or under market rate)	10,000	0	0
Bihar Power Supply Co. Ltd., 1,500 Deferred Ordinary Shares of Rs. 10 each	15,000	0	0
Interest accrued on Investments	..		
Trustees for Debenture holders—Realisation of Assets Account.			
Deposited with Managing Agents Investment 8 per cent. Bihar Paper Mills Co., Ltd., Debentures for Rs. 39,000 (at cost)	35,882	5	3
	32,250	0	0
			68,132 5 3
Cash and Other Balances—			
Imperial Bank of India on Current account	723	10	1
Cash at—			
Offices	5,343	4	4
Mills	329	15	3
			6,396 13 8
Total	99,35,151	8	7
Total	99,35,151	8	7

	Rs. A. P.	
<i>Less—Depreciation—</i>		
As at 31st March 1927	14,62,755 4 2	
Since added	47,001 1 11	
	15,09,756 6 1	11,80,000 0 0
<i>Railway Siding—</i>		
As at 31st March 1927	56,901 9 3	
<i>Less—Depreciation—</i>		
As at 31st March 1927	56,401 9 3	500 0 0
<i>Bamboo Mill Block—</i>		
Net Expenditure to date	25,55,554 15 3	
<i>Less—Written off—</i>		
To 31st March 1927	18,64,563 6 2	
This half-year	1,90,991 9 1	20,55,554 15 3
		5,00,000 0 0
Block No. 1 Mill as above		27,57,800 0 0
Block No. 2 Mill as above		14,80,500 0 0
Bamboo Mill Block as above		5,00,000 0 0
<i>Note—</i>		
Total Expenditure to date	1,38,90,292 1 3	
Total Depreciation to date	86,51,982 1 3	
	47,38,300 0 0	
<i>Fleet—</i>		
As at 31st March 1927	16,400 0	
<i>Less—Depreciation—</i>		
As at 31st March 1927	11,400 0 0	5,000 0 0
<i>Furniture and Fittings—</i>		
As at 31st March 1927	..	6,000 0 0
<i>Motor Car—</i>		
As at 31st March 1927	..	1,000 0 0
Carried over	87,24,606 7 1	47,50,300 0 0

Balance Sheet as at 30th September 1927—contd.

CAPITAL AND LIABILITIES.		Rs.	A. P.	Rs.	A. P.	PROPERTY AND ASSETS.		Rs.	A. P.	Rs.	A. P.
Brought forward		5,82,344	14 1	87,24,506	7 1	Brought forward		5,82,344	14 1	47,50,800	0 0
Live Stock—						As at 31st March 1927		--		1	0 0
Stocks—						Paper (at or under market rate)		5,22,344	14 1		
Raw Materials, Chemicals, Stores, etc. (at or under cost)						Insurance Premium, etc., paid in advance		15,32,851	4 9	20,54,698	2 10
Debits Due to the Company—						Bills outstanding (account Government)		--		39,224	15 10
Do (Sundry Buyers)						Do (Sundry Debtors)		18,69,380	9 9		
Less—Provision for Bad and Doubtful Debts, Discounts, etc.						Investments—		2,41,750	6 10	16,27,680	2 11
						3½ per cent. and 3 per cent. Government Securities for Rs. 57,100 (at or under market rate)					
						6 per cent. Ten-year Bonds, 1931 for Rs. 72,900 (at or under market rate)		37,153	10 0		
						5 per cent. Loan, 1948-55 for Rs. 10,000 (at or under market rate)		72,000	0 0		
						Bhappara Power Supply Co., Ltd., 1,500 Deferred Ordinary Shares of Rs. 10 each		10,000	0 0		
						Interest accrued on Investments		15,000	0 0	1,35,053	10 0
						Trustees for Debenture-holders—Realisation of Assets Account—		--		1,816	6 6
						Deposited with Managing Agents . Paper Mills Co., Ltd., Debentures for Rs.39,000 (at cost)		70,706	5 3		
								32,250	0 0		

6 per cent. Titaghur Paper Mills Co., Ltd., Debentures of Rs. 8,000 (at cost)	8,000	0	0	1,11,046	5	3
Cash and Other Balances— Imperial Bank of India on Current Account			66	10	11	
Cash at— Office			4,866	11	7	
Mills			304	5	3	
						5,237 11 9



सत्यमेव जयते

Total	87,24,506	7	1	Total	87,24,506	7	1
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<i>Less</i> —Depreciation— As at 30th September 1927	Rs. A. P. 15,08,756 6 1 1,25,890 0 0	16,33,646 6 1	10,50,000 0 0
Railway Siding— As at 30th September 1927	56,961 9 3	56,961 9 3	
<i>Less</i> —Depreciation— As at 30th September 1927	56,461 9 3	56,461 9 3	500 0 0
Bamboo Mill Block— Net Expenditure to date	25,60,121 4 3	25,60,121 4 3	
<i>Less</i> —Written off— To 30th September 1927	20,55,554 15 3 1,60,566 5 0	21,60,121 4 3	4,00,000 0 0
This half-year			
Block No. 1 Mill as above . . . . .		..	25,97,800 0 0
Block No. 2 Mill as above . . . . .		..	13,70,500 0 0
Bamboo Mill Block as above . . . . .		..	4,00,000 0 0
<i>Note—1</i> Total Expenditure to date	Rs. A. P. 1,34,09,037 14 5		
Total Depreciation to date	90,40,737 14 5		
	43,68,300 0 0		
Flotilla— As at 30th September 1927	16,400 0 0	16,400 0 0	
<i>Less</i> —Depreciation— As at 30th September 1927	Rs. A. P. 11,400 0 0 2,000 0 0	13,400 0 0	3,000 0 0
Since added			
Carried over	91,55,787 1 9	..	48,71,800 0 0

सत्यमेव जयते

<i>Less—Depreciation—</i> As at 31st March 1928	.	.	.	5,83,202	14	4	3,20,000	0
<i>Machinery and Plant—</i> As at 31st March 1928	.	.	.	26,88,646	6	1		
	Rs.	A.	P.					
Since added	53,672	2	10					
Transferred from No. 1 Mill	1,14,264	11	0					
				1,87,936	18	10		
<i>Less Sold</i>		.	.	23,51,588	3	11		
		.	.	4,154	7	9		
		.	.	28,47,428	12	2		
<i>Less—Depreciation—</i> As at 31st March 1928	16,33,646	6	1					
Since added	83,782	6	1					
				17,17,428	12	2	11,30,000	0
<i>Railway Siding—</i> As at 31st March 1928	.	.	.	56,961	9	3		
<i>Less—Depreciation—</i> As at 31st March 1928	.	.	.	56,461	9	3	500	0
<i>Bamboo Mill Block—</i> Net Expenditure to date	.	.	.	25,54,631	8	3		
	Rs.	A.	P.					
<i>Less—Written Off—</i> To 31st March 1928	21,80,121	4	3					
This half year	94,510	4	0					
				22,54,631	8	3	3,00,000	0
<i>Block No. 1 Mill as above</i>	.	.	.				25,08,000	0
<i>Block No. 2 Mill as above</i>	.	.	.				14,50,500	0
<i>Bamboo Mill Block as above</i>	.	.	.				3,00,000	0
Carried over	89,33,977	5	11				42,56,500	0
Carried over	.	.	.					

Balance Sheet as at 30th September 1928—contd.

CAPITAL AND LIABILITIES:		PROPERTY AND ASSETS.		Rs.	A. P.	Rs.	A. P.
Brought forward	..	Brought forward	..	42,56,500	0 0	42,56,500	0 0
Note—		Rs. A. P.					
Total Expenditure to date		1,86,42,390	11 7				
Total Depreciation to date		93,85,890	11 7				
		42,56,500	0 0				
Flotilla—							
As at 31st March 1928		16,400	0 0				
Less—Depreciation—							
As at 31st March 1928		13,400	0 0				
Since added		1,000	0 0				
		14,400	0 0				
Bamboo Forest Block—							
Expenditure to date		7,947	0 9				
Less—Depreciation		2,947	0 9				
		5,000	0 0				
Furniture and Fittings—							
As at 31st March 1928		5,000	0 0				
Motor Car—							
As at 31st March 1928		2,500	0 0				
Less—Amount Written off		1,000	0 0				
		1,500	0 0				
Live Stock—							
As at 31st March 1928		1	0 0				
Stocks—							
Paper (at or under market rate)		5,27,362	7 7				
Raw Materials, Chemicals, Stores, etc. (at or under cost)		17,70,323	10 0				
Insurance Premia, etc., paid in Advance		23,97,686	1 9				
		41,346	5				

Debits Due to the Company—		Rs.	A.	P.
Bill outstanding—				
Account Government	5,31,758	8	9	
Sundry Buyers	15,17,314	6	1	
Sundry Debtors	3,25,282	11	3	
	23,74,355	10	1	
Less—Provision for Bad and Doubtful Debts, Discounts, etc.	2,75,043	8	8	
	20,99,312	1	5	
Investments—				
3½ per cent. and 3 per cent. Government Securities for Rs. 27,100 (at or under market rate)	14,800	8	0	
6 per cent. Ten-year Bonds 1981 for Rs. 72,900 (at or under market rate)	72,900	0	0	
Bhatpara Power Supply Co., Ltd., 1,500 Deferred Ordinary Shares of Rs. 10 each	15,000	0	0	
	1,02,700	8	0	
Interest Accrued on Investments	..			2,321 7 2
Trustees for Debenture Holders—				
Realisation of Assets Account—				
Deposited with Managing Agents	20,572	5	3	
Investment 8 per cent. Titaghar Paper Mills Co., Ltd., Debenture for Rs. 41,000 (at cost)	34,390	0	0	
6 per cent. Titaghar Paper Mills Co., Ltd., Debentures for Rs. 61,500 (at cost)	62,000	0	0	
	1,16,962	5	3	
Cash and Other Balances—				
Imperial Bank of India on Current Account	550	2	2	
Cash at Office	2,928	3	3	
" Mills	169	5	6	
	3,647	10	11	
Total	189,83,977	5	11	
Total	..	..	..	89,83,977 5 11

Balance Sheet as at 31st March 1929.

CAPITAL AND LIABILITIES.			PROPERTY AND ASSETS.		
Capital—	Rs.	A. P.	Rs.	A. P.	Rs. A. P.
Authorised—					
175,000 Ordinary Shares of Rs. 2-8 each	4,37,500	0 0			
8,350 8 per cent. Cumulative Preference Shares of Rs. 40 each	3,34,000	0 0			
8,160 8 per cent. Cumulative Preference Shares of Rs. 100 each	8,16,000	0 0			
350,000 Deferred Shares of Rs. 1 each	3,50,000	0 0			
	19,37,500	0 0			
Issued and Subscribed—					
175,000 Ordinary Shares of Rs. 2-8 each fully paid up	4,37,500	0 0			
8,350 8 per cent. Cumulative Preference Shares of Rs. 40 each fully paid up	3,34,000	0 0			
8,160 8 per cent. Cumulative Preference Shares of Rs. 100 each fully paid up	8,16,000	0 0			
285,535 Deferred Shares of Rs. 1 each fully paid up	2,85,535	0 0			
	18,73,035	0 0			
Mortgage Debentures—					
Third Issue (6 per cent.)	5,00,000	0 0			
Fourth Issue (8 per cent.)	24,00,000	0 0			
			
Reserve	19,89,998	2 6			
Chartered Bank of India, Australia and China—	19,211	7 6			
Secured by Hypothecation of Stocks.	4,59,215	6 8			
Indian Workers' Relief Fund	1,11,551	1 6			
Dépôt (Unsecured)	1,012	10 3			
Interest on Debentures	25,100	12 2			
Deferred Shareholders Dividend	..	..	
Dividends unclaimed	..	..	
Liabilities—					
Goods supplied	7,64,757	13 3			
Expenses	3,57,150	0 11			
Other Finance	9,04,132	7 11			
	20,26,040	6 1			
Profit and Loss Account—					
Balance at credit	1,80,564	4 10			
			
	20,26,040	6 1			
	1,80,564	4 10			
	22,34,583	4 1			
	13,54,333	4 1			
	40,000	0 0			
	13,94,533	4 1			
	8,40,000	0 0			
	49,63,748	5 9			
	3,01,729	8 4			
	52,45,476	14 1			
	5,983	12 0			
	52,50,493	2 1			
	33,43,748	5 9			
	1,20,744	12 4			
	34,64,493	2 1			
	81,884	5 0			
	75,884	5 9			
	1,000	0 0			
	76,884	5 9			
	5,000	0 0			
	9,03,202	14 4			
	5,88,202	14 4			
	3,20,000	0 0			

Machinery and Plant—					
As at 30th September 1928 . . .	Rs.	A. P.			
Since added . . .			28,47,428 12 2		
			1,74,893 12 1		
Less—Sold . . .			30,21,822 8 3		
			3,328 6 0		
			30,18,494 2 3		
Less—Depreciation—					
As at 30th Sep-	Rs.	A. P.			
tember 1928 . . .			17,17,428 12 2		
Since added . . .			51,065 6 1		
			17,68,494 2 3		12,50,000 0 0
Railway Siding—					
As at 30th September 1928 . . .			56,961 9 3		
Less—Depreciation—					
As at 30th September 1928 . . .			56,461 9 3		500 0 0
					15,70,500 0 0
Bamboo Mill Block—					
Net Expenditure to date . . .	Rs.	A. P.	25,29,496 6 8		
Less—Written off—					
To 30th September					
1928 . . .			22,54,631 8 3		
This half-year . . .			24,864 14 5		
			22,79,496 6 8		2,50,000 0 0
Block No. 1 Mill as above . . .					23,40,000 0 0
Block No. 2 Mill as above . . .					15,70,500 0 0
Bamboo Mill Block as above . . .					2,50,000 0 0
Note—					
Total Expenditure to	Rs.	A. P.			
date . . .			1,40,84,065 12 5		
Total Depreciation to			96,23,565 12 5		
date . . .			44,60,500 0 0		
Carried over . . .			99,89,626 3 9		
Carried over . . .					44,60,500 0 0

Balance Sheet as at 31st March 1929—contd.

CAPITAL AND LIABILITIES.		RS.	A. P.	RS.	A. P.	PROPERTY AND ASSETS.		RS.	A. P.	RS.	A. P.
Brought forward		..	99,89,629 0 9	..		Brought forward		..		44,80,500 0 0	
						Flotilla—					
						As at 30th September 1928		Rs.	A. P.	16,400 0 0	
						Less—Depreciation—					
						As at 30th September 1928		14,400 0 0			
						Since added		1,000 0 0			
								15,400 0 0		1,000 0 0	
						Bamboo Forest Block—		Rs.	A. P.		
						As at 30th September 1928		2,947 0 9			
						Since added		8,015 2 0			
								5,962 2 9		5,000 0 0	
						Furniture and Fittings—				5,000 0 0	
						As at 30th September 1928		..			
						Motor Car—					
						As at 30th September 1928		1,500 0 0			
						Less—Amount written off		1,000 0 0		500 0 0	
						Live Stock—					
						As at 30th September 1928		..		1 0 0	
						Stocks—					
						Paper (at or under market rate)		6,01,196 6 0			
						Raw Materials, Chemicals, Stores etc., (at or under cost)		15,83,233 8 1			
						Goods in Transit		5,33,062 7 8			
						Bamboo Forest Stock		22,089 0 0		27,39,631 5 9	
						Insurance Premia, etc., paid in Advance		..		28,267 15 4	
						Debts due to the Company—					
						Bill Outstanding—					
						Account Govern-					
						ment		4,63,661 8 11			
						Sundry Buyers		18,40,520 12 0			
						Sundry Debtors		4,59,112 0 0			
								27,63,294 4 11			

<i>Less—Provision for Bad and Doubtful Debts, Discounts, etc.</i>	2,56,475	9 10	25,06,818	11 1
Investments—				
3½ per cent. and 3 per cent. Government Securities for Rs. 36,900 (at or under market rate)	21,991	10 0		
6 per cent. Ten-year Bonds 1931 for Rs. 72,900 (at or under market rate)	72,900	0 0		
Bhatpara Power Supply Co., Ltd., 1,500 Deferred Ordinary Shares of Rs. 10 each	15,000	0 0		
Interest Accrued on Investments	..		1,03,891	10 9
			1,080	14 3
Trustees for Debenture Holders—				
Realisation of Assets Account—				
Deposited with Managing Agents	33,464	7 3		
Investment 8 per cent. Titaghur Paper Mills Co., Ltd., Debentures for Rs. 41,000 (at cost)	34,390	0 0		
6 per cent. Titaghur Paper Mills Co., Ltd., Debenture for Rs. 61,500 (at cost)	62,000	0 0	1,29,864	7 3
Cash and Other Balances—				
Imperial Bank of India on Current Account	389	14 8		
Allahabad Bank on Current Account	615	4 8		
Cash at Office	2,029	14 9		
" Mills	155	2 0	3,190	4 1
Total	..		92,89,426	3 9
Total	..		92,89,426	3 9

Less—Sold	2,179 0 0			
	<u>31,68,855 15 11</u>			
Less—Depreciation— As at 31st March 1929	Rs. A. P. 17,88,484 2 3 Since added			
	18,88,855 15 11			18,00,000 0 0
Railway Siding— As at 31st March 1929	56,961 9 3			
Less—Depreciation— As at 31st March 1929	56,461 9 3			500 0 0
	<u>10,20,500 0 0</u>			<u>10,20,500 0 0</u>
Bamboo Mill Block— Net Expenditure to date	Rs. A. P. 22,79,496 6 8 This half-Year			
Less—Written off— To 31st March 1929	25,080 0 0			2,25,000 0 0
	<u>23,04,496 6 8</u>			<u>25,59,000 0 0</u>
Block No. 1 Mill as above . . . . .	..			18,20,500 0 0
Block No. 2 Mill as above . . . . .	..			2,25,000 0 0
Bamboo Mill Block as above . . . . .	..		
Note— Total Expenditure to date	Rs. A. P. 1,42,82,716 1 1 Total Depreciation to date			
	<u>44,04,500 0 0</u>			
Flotilla— As at 31st March 1929	Rs. A. P. 16,400 0 0			
Less—Depreciation— As at 31st March 1929	15,408 0 0 Since added			
	<u>15,900 0 0</u>			500 0 0
Carried over	Carried over			<u>44,05,000 0 0</u>
	90,70,743 13 8			

Balance sheet as at 30th September 1929—contd.

CAPITAL AND LIABILITIES.		Rs.	A. P.	PROPERTY AND ASSETS.		Rs.	A. P.
Brought forward		..	90,70,743 13 8	Brought forward		..	44,05,000 0 0
				Bamboo Forest Block—			
				As at 31st March 1929		10,962	2 9
				Less—Depreciation—			
				As at 31st March 1929		5,962	2 9
				Since added		3,000	0 0
						8,962	2 9
				Furniture and Fittings—			2,000 0 0
				As at 31st March 1929		..	5,000 0 0
				Motor Car—			
				As at 31st March 1929		500	0 0
				Less—Amount written off		300	0 0
							200 0 0
				Live Stock—			1 0 0
				As at 31st March 1929		..	
				Stocks—			
				Paper (at or under market rate)		6,05,945	3 9
				Raw Materials, Chemicals, Stores, etc. (at or under cost)		11,04,463	6 4
				Goods in Transit		8,09,399	12 11
				Bamboo Forest Stock		32,921	0 0
							25,52,729 7 0
				Insurance Premiums, etc. paid in Advance		..	15,415 2 9
				Debts due to the Company—			
				Bill outstanding—			
				Account Government		1,69,717	13 7
				Sundry Buyers		16,17,001	3 4
				Sundry Debtors		9,23,274	14 11
						21,09,993	15 10
				Less—Provision for Bad and Doubtful Debts, Discounts, etc.		2,81,830	13 6
							18,28,063 2 6

<i>Less—Depreciation—</i>					
As at 30th September 1929:	5,83,202	14	4		3,20,000 0 0
<i>Machinery and Plant—</i>					
As at 30th September 1929	31,08,855	15	11		
Since added	87,387	10	3		
	32,56,243	10	2		
<i>Less—Sold</i>	2,992	15	0		
	32,53,850	11	2		
<i>Less—Depreciation—</i>					
As at 30th September 1929	Rs. A. P.				
Since added	18,08,855	15	11		
	84,994	11	3		
	19,63,850	11	2		13,00,000 0 0
<i>Railway Siding—</i>					
As at 30th September 1929	56,961	9	3		
<i>Less—Depreciation—</i>					
As at 30th September 1929	56,461	9	3		500 0 0
					16,20,500 0 0
<i>Bamboo Mill Block—</i>					
Net Expenditure to date	25,29,496	6	8		
<i>Less—Written off—</i>					
To 30th September 1929	Rs. A. P.				
This half-year	23,04,496	6	8		
	25,000	0			
	23,29,496	6	8		2,00,000 0 0
<i>Block No. 1 Mill as above</i>	..				23,93,000 0 0
<i>Block No. 2 Mill as above</i>	..				16,20,500 0 0
<i>Bamboo Mill Block as above</i>	..				2,00,000 0 0
Carried over	..				44,13,500 0 0
94,26,823	16	5			

Balance Sheet as at 31st March 1930—contd.

CAPITAL AND LIABILITIES.		RS.	A. P.	RS.	A. P.	RS.	A. P.
Brought forward		..	94,26,323 15 6	..	..	44,13,500 0 0	44,13,500 0 0
Note—							
Total Expenditure to date			Rs. A. P.				
			1,45,51,348 2 10				
Total Depreciation to date			1,01,37,848 2 10				
			44,13,500 0 0				
Fleet—							
As at 30th September 1929			..		16,400 0 0		
Less—Depreciation—							
As at 30th September 1929			..		15,900 0 0		500 0 0
Bamboo Forest Block—							
As at 30th September 1929			..		10,962 2 9		
Less—Depreciation—							
As at 30th September 1929			8,962 2 9				
Since added			500 0 0				
					9,462 2 9		1,500 0 0
Furniture and Fittings—							
As at 30th September 1929				5,000 0 0
Motor Car—							
As at 30th September 1929				200 0 0
Live Stock—							
As at 30th September 1929				1 0 0
Stocks—							
Paper (at or under market rate)					6,32,261 1 0		
Raw Materials, Chemicals, Stores, etc. (at or under cost)					13,99,220 15 8		
Goods in Transit					5,06,967 15 1		
Bamboo Forest Stock					30,719 0 0		
Insurance Premium, etc., paid in advance					..		25,69,108 15 9
							21,331 11 6

Debts due to the Company—

	Rs.	A.	P.
Bill outstanding (account Government).	4,70,088	12	4
Do. (Sundry Buyers).	18,14,955	2	4
Sundry Debtors	1,46,818	5	9
Total	24,31,861	4	5
Less—Provision for bad and doubtful debts, discounts, etc.	2,76,348	9	9
Total	21,55,463	10	8

Investments—

3½ per cent. and 3 per cent. Government Securities for Rs. 30,900 (at or under market rate)	21,991	10	0
6 per cent. Ten-year Bonds 1931 for Rs. 13,300 (at or under market rate)	13,300	0	0
4 per cent. Loan 1960-70 for Rs. 12,800 (at or under market rate)	9,792	0	0
5 per cent. Loan 1939-44 for Rs. 69,600 (at or under market rate)	59,611	8	0
Biapara Power Supply Co., Ltd., 1,500 Deferred Ordinary Shares of Rs. 10 each	15,000	0	0
Total	1,19,505	2	0
	1,204	10	7

Interest accrued on investments

Trustees for Debenture-holders—			
Realisation of Assets Account—			
Deposited with Managing Agents	18,764	7	3
Investment 8 per cent. Titaghur Paper Mills Co., Ltd., Debentures for Rs. 41,000 (at cost)	34,390	0	0
6 per cent. Titaghur Paper Mills Co., Ltd., Debenture for Rs. 81,500 (at cost)	82,200	0	0
Total	1,30,354	7	3

Cash and Other Balances—

Imperial Bank of India on Current Account	923	11	0
Allahabad Bank on Current Account	790	12	1
Cash at Office	5,236	10	7
Cash at Bamboo Forest	1,624	1	3
Cash at Mills	79	2	9
Total	8,654	5	8

Total . . . 94,26,323 15 5

Total . . . 94,26,323 15 5

Balance Sheet as at 30th September 1930—contd.

CAPITAL AND LIABILITIES.	Rs.		PROPERTY AND ASSETS.		Rs.	
	A. P.	A. P.			A. P.	A. P.
Brought forward	87,56,304	12 8	Brought forward	.	..	42,02,014
			Floella—			0 0
			As at 31st March 1930	.	16,400	0 0
			Less—Depreciation—			
			As at 31st March 1930	.	15,900	0 0
			Bamboo Forest Block—			500 0 0
			As at 31st March 1930	.	10,982	2 9
			Since added	.	10,888	0 0
					21,850	2 9
			Less—Depreciation—			
			As at 31st March 1930	.	9,462	2 9
			Since added	.	2,388	0 0
					11,850	2 9
			Furniture and Findings—			10,000 0 0
			As at 31st March 1930	.	..	5,000 0 0
			Motor Car—			
			As at 31st March 1930	.	200	0 0
			Since added	.	5,133	0 0
			Less—Amount written off	.	5,333	0 0
					1,333	0 0
			Live Stock—			4,000 0 0
			As at 31st March 1930	.	..	1 0 0
			Stocks—			
			Paper (at or under market rate)	.	6,70,112	9 6
			Raw materials, Chemicals, Stores, etc. (at or under cost)	.	11,21,537	8 2
			Goods in Transit	.	7,63,447	5 3
			Bamboo Forest Stock	.	13,531	0 0
			Insurance Premia, etc., paid in advance	.	..	25,68,028 6 11
						13,999 11 6

Debts due to the Company—

	Rs.	A. P.
Bill outstanding (account Government).	3,30,602	11 9
Do. (Sundry Buyers).	13,63,144	7 4
Sundry Debtors	65,949	12 8

19,59,696 15 9
2,71,006 15 6

16,88,691 0 3

19,59,696 15 9
2,71,006 15 6

Investments—

3½ per cent. and 3 per cent. Government Securities for Rs. 34,400 (at or under market rate)
4 per cent. Loan 1960-70 for Rs. 12,600 (at or under market rate)
5 per cent. Loan 1939-44 for Rs. 65,400 (at or under market rate)
6 per cent. Ten-Year Bonds 1931 for Rs. 13,300 (at or under market rate)
Bhatpara Power Supply Co., Ltd., 1,500 Deferred Ordinary Shares of Rs. 10 each

20,275 7 0
9,261 0 0
61,248 8 0
13,300 0 0
15,000 0 0

1,19,084 15 0
1,574 5 11

Interest accrued on investments . . .
Trustees for Debentures holders—
Realisation of Assets Account—
Deposited with Managing Agents
Investment 8 per cent. Titaghur Paper Mills Co., Ltd., Debentures for Rs. 41,000 (at cost)
6 per cent. Titaghur Paper Mills Co., Ltd., Debenture for Rs. 81,500 (at cost).

13,764 7 3
34,300 0 0
82,200 0 0

1,30,354 7 3

Cash and other Balances—

Imperial Bank of India on Current Account
Allahabad Bank on Current Account
Cash in Office
Cash at Bamboo Forest
Cash at Mills

921 11 6
36 0 5
3,483 11 6
7,895 0 6
110 6 0

12,456 13 11

Total . 87,56,304 12 8

Total .

87,56,304 12 8

Balance Sheet as at 31st March 1931.

CAPITAL AND LIABILITIES.		Rs.	A. P.	Rs.	A. P.	PROPERTY AND ASSETS.		Rs.	A. P.	Rs.
Capital—						Block—No. 1 Mill—				
Authorized—						Land and Buildings—				
175,000 Ordinary Shares of Rs. 2-8 each .		4,37,500	0 0			As at 30th September 1930		22,62,423	4 8	
8,350 8 per cent. Cumulative Preference Shares of Rs. 40 each .		3,34,000	0 0			<i>Less—Depreciation—</i>				
8,100 8 per cent. Cumulative Preference Shares of Rs. 100 each .		8,16,000	0 0			As at 30th September 1930		Rs. A. P.		
350,000 Deferred Shares of Rs. 1 each .		3,50,000	0 0			ber 1930		14,42,423	4 8	
						Since added		20,000	0 0	
		19,37,500	0 0					14,62,423	4 8	8,00,000 0 0
Issued and Subscribed—						Machinery and Plant—				
175,000 Ordinary Shares of Rs. 2-8 each .		4,37,500	0 0			As at 30th September 1930		54,98,200	13 11	
fully paid up						Since added		1,83,404	15 2	
8,350 8 per cent. Cumulative Preference Shares of Rs. 40 each fully paid up .		3,34,000	0 0			<i>Less—Sold</i>		56,76,805	13 1	
8,100 8 per cent. Cumulative Preference Shares of Rs. 100 each fully paid up .		8,16,000	0 0					1,005	13 0	
317,995 Deferred Shares of Rs. 1 each .		3,17,995	0 0					56,75,600	0 1	
fully paid up						<i>Less—Depreciation—</i>				
						As at 30th September 1930		Rs. A. P.		
Mortgage Debentures—						ber 1930		38,43,200	13 11	
Third Issue (6 per cent.)		5,00,000	0 0			Since added		1,82,399	2 2	
Fourth Issue (8 per cent.)		25,00,000	0 0					39,75,600	0 1	17,00,000 0 0
						Railway Siding—				
Reserve				3,53,897	0 3	As at 30th September 1930		81,884	5 9	
Chartered Bank of India, Australia and China—						<i>Less—Depreciation—</i>				
Secured by hypothecation of Stocks				17,31,151	2 1	As at 30th September 1930		Rs. A. P.		
Indian Workers' Relief Fund				19,008	0 7	ber 1930		79,884	5 9	
Indian Staff Pension Fund				11,530	0 0	Since added		1,000	0 0	
Deposits (Unsecured)				5,05,780	0 6			80,884	5 9	1,000 0 0
Interest on Debentures				33,498	14 6					
Ordinary Shareholders Dividend				2,353	13 4					
Deferred Shareholders Dividend				1,416	15 1					
Dividends Unclaimed				32,791	5 10					
						Block—No. 2 Mill—				
Liabilities—						Land and Buildings—				
Goods supplied		4,17,453	5 1			As at 30th September 1930		9,03,202	14 4	
Expenses		4,62,639	4 0							
Other Finance		6,91,595	8 8							
				15,71,688	1 9					

Insurance Premium, etc., paid in advance .		43,078 6 1
Debts due to the Company—		
Bill outstanding (account Government).	Rs. A. P.	
Do. (Sundry Buyers) .	4,72,212 15 0	
Sundry Debtors .	13,74,736 2 8	
	90,845 10 11	
Less—Provision for bad and doubtful debts, discounts, etc.	20,43,794 12 7	
	2,42,996 13 6	17,90,798 15 1
Investments—		
3½ per cent. and 3 per cent. Government Securities for Rs. 34,490 (at or under market rate)	20,275 7 0	
4 per cent. Loan 1960-70 for Rs. 12,000 (at or under market rate)	9,261 0 0	
5 per cent. Loan 1959-44 for Rs. 65,400 (at or under market rate)	61,067 4 0	
6 per cent. Ten-year Bonds 1931 for Rs. 13,300 (at or under market rate)	13,300 0 0	
Bhatpara Power Supply Co., Ltd., 1,500 Deferred Ordinary Shares of Rs. 10 each	15,000 0 0	1,18,903 11 0
Interest accrued on investments . . . .	..	2,156 11 8
Trustees for Devventure-holders—		
Realisation of Assets Account—		
Deposited with Managing Agents	13,764 7 3	
Investment 8 per cent. Titagthur Paper Mills Co., Ltd., Debentures for Rs. 41,000 (at cost)	34,390 0 0	
6 per cent. Titagthur Paper Mills Co., Ltd., Debenture for Rs. 81,300 (at cost)	82,200 0 0	1,30,854 7 3
Cash and other Balances—		
Imperial Bank of India on Current Account	404 14 0	
Allahabad Bank on Current Account	570 5 0	
Cash at Office	3,341 5 10	
Cash at Bamboo Forest	9,492 13 3	
Cash at Mills	258 0 9	14,267 7 4
Total . . . .	..	93,41,293 6 10
Total . . . .	..	93,41,293 6 10

ANNEXURE I(a).

Statement showing works cost of Grass Pulp Manufactured at the above Mills during the year ending 31st March 1931.

	Recovery Plant.	Causticising Plant.	Quantity Digested.	Digester Plant.	Total Cost.	COST PER TON OF GRASS PULP.	
	Rs. A. P.	Rs. A. P.	Cwt.	Rs. A. P.	Rs. A. P.	Bone dry basis.	Air dry basis.
Materials (Grass) . . .	..	..	287,913-00	7,67,105 10 5	7,67,105 10 5	127-098	114-388
Chemicals . . .	..	69,604 7 2	45,534-41	98,250 8 2	1,67,854 15 4	29-439	25-595
Total Cost of Materials and Chemicals.	..	69,604 7 2	333,447-41	8,55,356 2 7	9,24,960 9 9	155-537	139-983
CONVERSION CHARGES.							
Supervision . . .	..	..	..	..	..	..	..
Labour—							
Carrying, Picking and Dusting.	..	..	..	45,672 3 8	45,672 3 8	7-738	6-964
Digesters . . .	..	..	..	19,462 11 9	19,462 11 9	3-298	2-968
Sundry . . .	8,979 0 3	8,461 14 9	..	..	17,440 15 0	2-955	2-659
Oils . . .	756 5 2	613 13 1	..	449 1 5	1,819 3 8	3-08	2-77
Beltings . . .	626 1 10	252 4 11	..	535 6 6	1,413 13 3	2-40	2-16
Repairs and Maintenance	19,478 0 0	4,944 0 0	..	36,984 9 11	61,406 9 11	10-404	9-364
Steam . . .	31,991 13 10	19,563 14 7	..	52,307 8 5	1,03,863 4 10	17-597	15-837

Power and Light . . .	4,160 8 8	2,037 11 6	..	3,453 1 6	9,651 5 8	1-635	1-472
Coal (Recovery Furnace)	6,499 2 0	..	..	..	6,499 2 0	1-101	-992
Water	4,100 13 0	1,069 12 4	..	1,761 14 4	6,932 7 8	1-175	1-057
Total Conversion Charges	76,591 12 9	36,943 7 2	..	1,60,626 9 6	2,74,161 13 5	46-451	41-806
Total Direct Cost . .	76,591 12 9	1,06,547 14 4	..	10,15,982 12 1	11,99,122 7 2	201-988	181-789
On Cost Charges . .	1,020 0 0	1,020 0 0	..	11,384 7 1	13,424 7 1	2-274	2-047
Total Costs	77,611 12 9	1,07,567 14 4	..	10,27,367 3 2	12,12,546 14 3	204-262	183-836
Number of Cooks . .	..	..	..	..	..	..	..
Total Production . .	29,290 Cwt.	27,248 Cwt.	..	..	..	5902-216	6,492-438 Tons
Percentage of Caustic used	..	..	..	..	..	15-815%	15-815%
Yield . . . . .	..	..	..	..	..	41-00%	45-10%

ANNEXURE I(b).

Statement showing works cost of Bamboo Pulp Manufactured at the above Mills during the year ending 31st March 1931.

	Recovery Plant.	Causticising Plant.	Quantity Digested.	Digester Plant.	Total costs.	COST PER TON OF BAMBOO PULP.	
	Rs. A. P.	Rs. A. P.	Cwt.	Rs. A. P.	Rs. A. P.	Bone dry basis.	Air dry basis.
MATERIALS AND CHEMICALS.							
Materials (Bamboo)	..	..	108,997.000	1,66,147 6 1	1,66,147 6 1	76.216	68.594
Chemicals	..	28,716 0 0 (Lime)	22,023.160	1,07,230 0 2	1,35,946 0 2	62.362	56.126
Total Cost of Materials and Chemicals.	..	28,716 0 0	131,020.160	2,73,377 6 3	3,02,093 6 3	138.578	124.720
CONVERSION CHARGES.							
Supervision	2,555 3 0	..	..	3,600 0 0	6,155 3 0	2.823	2.541
Labour— Carrying, Crushing and Chopping.	..	..	..	6,779 11 1	6,779 11 1	3.110	2.799
Digesters	..	..	..	5,327 15 2	5,327 15 2	2.444	2.200
Sundry	5,980 6 0	3,557 1 3	..	7,252 15 6	16,790 6 9	7.703	6.933

Oils	1,389	2	0	211	6	10	..	220	4	3	1,820	13	1	-835	-752
Beltings	308	5	11	398	5	3	..	700	10	5	1,407	5	7	-645	-580
Repairs and Maintenance.	16,785	4	9	2,807	1	3	..	26,839	10	6	46,432	0	6	21-300	19-170
Steam	14,302	4	1	8,207	2	1	..	19,917	9	4	42,426	15	6	19-463	17-517
Power and Light	3,682	15	8	145	1	1	..	2,888	2	3	6,716	3	0	3-081	2-773
Coal and Oil (Recovery Furnace).	1,160	6	8	..	..	..	..	..	..	..	1,160	6	8	-532	-479
Water	435	0	0	361	12	9	..	829	3	3	1,626	0	0	-746	-670
Total Conversion Charges	46,599	0	1	15,687	14	6	..	74,356	1	9	1,36,643	0	4	62-682	56-414
Total Direct Cost . . .	46,599	0	1	44,403	14	6	..	3,47,733	8	0	4,38,736	6	7	201-260	181-134
On Cost Charges . . . .	..	..	..	..	..	..	..	6,079	8	4	6,079	8	4	2-789	2-510
Total Cost	46,599	0	1	44,403	14	6	..	3,53,813	0	4	4,44,815	14	11	204-049	183-644
Number of Cooks . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	1,809	1,809
Total Production	23,458	Cwt.	..	13,501	Cwt.	..	..	..	..	..	..	..	..	2,179-94	2,397-93 Tons.
Percentage of Caustic used	..	..	..	..	..	..	..	..	..	..	..	..	..	20-20%	20-20 %
Yield into unbleached Pulp	..	..	..	..	..	..	..	..	..	..	..	..	..	40%	44%

ANNEXURE J.

Statement showing Managing Agents' Allowance and Commission, also Head Office expenses in each year since 1923-24.

	Managing Agents' Allowance.			Managing Agents' Commission.		Total.	Head Office Expenses.		Total.
	Rs.			Rs.			Rs.		
1924-25	12,000			..		12,000	1,72,996		1,84,996
1925-26	24,000			23,845		47,845	1,12,785		1,60,630
1926-27	24,000			47,448		71,445	1,38,305		2,09,753
1927-28	24,000			57,414		81,414	1,39,281		2,20,705
1928-29	24,000			72,106		96,106	1,38,711		2,34,817
1929-30	24,000			64,033		88,033	1,29,786		2,17,819
1930-31	24,000			52,961		76,961	1,31,802		2,08,763

(3) Letter No. 209-31/2, dated the 15th June, 1931, from the Titaghur Paper Mills Company Limited, Calcutta.

* * * *

In addition to the answers to the questionnaire we also submit a note herewith in regard to our projected scheme for a Bamboo Pulp Mill. This is for the information of the Board and of Government. As the scheme is still in its early stages we specially request that the contents of this separate Note may be treated as confidential.*

Enclosure No. 1.

NOTE *re* PROPOSED BAMBOO PULP MILL AT OR NEAR CUTTACK.

The proposal to erect a mill at a suitable site in the vicinity of Cuttack for the manufacture of paper pulp from bamboos obtainable in the lower Mahanadi basin is a subject which has been given serious consideration by this Company.

Such a project was put forward by Mr. William Raitt, F.C.S., M.I.CHEM.E., in a Bulletin No. 5 issued by the Department of Industries, Bihar and Orissa.

Since we obtained a lease from the Bihar and Orissa Government for the extraction of bamboos from several forest blocks in the Angul Division, we have always had in mind the development of these areas, and others if necessary, to obtain a sufficient supply of bamboos for a pulp mill of economic size, say a unit with a minimum production of 10,000 tons bamboo pulp per annum capable of extension to double that amount.

In addition to the quantities of bamboos available in the Angul Forest Division and the surrounding Feudatory States, a careful study has been made of the labour force available in the district, the lines of communication and extraction throughout the forests and the suitability of the Mahanadi river as a means of transport for the bamboos from the forest regions to a probable mill site conveniently near to the Railway at Cuttack.

We shall now deal with each of the above points separately :—

(1) *Quantity of bamboos available in the district known as the lower Mahanadi basin.*—Mr. J. W. Nicholson, Deputy Conservator of Forests, Bihar and Orissa, carried out in 1922 a survey of the Angul Forest Division and the adjacent Feudatory States bordering on the Mahanadi river. We quote his summary of the quantities available per annum of the two main species of bamboos, viz., *Salia* (*dendrocalamus strictus*) and *Daba* (*bamboos arundinacea*),

	<i>Salia.</i>	<i>Daba.</i>
	Tons.	Tons.
Angul	45,200	5,000
Daspalla	5,100	1,300
Baud	5,700	1,250
Narsinghpur	4,100	1,400
Athmallick	6,000	1,900
Khandpara	1,500	1,100
	67,600	11,950

The above figures were given by Mr. Nicholson after he had allowed what he considered an ample margin to meet traders' and residents' requirements. It is also necessary to state that he based his figures on the assumption that the areas would be worked on a 7-year rotation and that 450 *Salia* bamboos

* This stipulation was subsequently withdrawn.

were the equivalent of one ton of dry material. Actually under working conditions, we are, by arrangement with the Forest Department of the Bihar and Orissa Government, working the areas on a 4-year rotation, and although it is as yet too soon for us to state definitely that such an arrangement will not lead eventually to a reduction in the sustained annual yield, we are hopeful that it will prove satisfactory. Another important point is that from records maintained during our working in these areas, we find that the average number of culms necessary to yield one ton of air-dry bamboo (i.e., bone dry plus 10 per cent. moisture content) is 330/340 and not 450 as taken by Mr. Nicholson in his calculations. It will be realised therefore that this margin of safety allow by Mr. Nicholson in his conversion from numbers to tons increased the quantities available as per his report by approximately 33 per cent.

(2) *Labour available.*—It is somewhat difficult to estimate the labour obtainable in these several areas. Dealing first with the Angul Division which we are working, we have found no difficulty in obtaining the labour necessary for the operations of cutting, extracting and handling. We have not of course been working the areas to their full extent, and it is probable that if it was suddenly decided to work all the areas to their maximum a shortage of labour would occur. On the other hand we are now extracting a quantity very much larger than was the usual extraction by traders before we commenced operations, and we do not anticipate any difficulty in obtaining labour for an output at least twice that of last season, which was 8,000 tons. By extending our operations in a gradual manner it is expected that the difficulty with regard to labour will not make itself felt and that an output of 25,000 tons could be obtained without serious difficulty.

The one respect where we have found difficulty is in obtaining the requisite number of carters to transport a quantity such as 8,000 tons. This shortage, however, has been overcome by the use of a fleet of motor-lorries and making forest roads suitable for such traffic, the cost of which compares not unfavourably with the cost of transportation by cart.

(3) *Lines of Communication.*—When we commenced operations in Angul Division we were fortunate in having a good metalled Public Works Department road running through our areas to our main river dépôt at Tikerpara. We have however had to build several feeder roads to tap the interior of the areas, but once we have completed the making of such roads in the ordinary course of working the areas during the first four years rotation, expenditure of this nature should not be again necessary.

From recent inspection carried out by our forest representative in the neighbouring States, we find that in the majority of these the lines of extraction are few and poor. Undoubtedly much time and money would require to be spent in these States if they are to be worked to anything near their full extent.

(4) *Suitability of Mahanadi River as means of transport.*—Geographically the Mahanadi river is a very convenient means by which bamboos can be transported from the Angul Division and the majority of the adjacent States. There are however certain difficulties. In the ordinary course the river is floatable from the beginning of July till about the end of January in each year, so that for a factory situated at or near Cuttack a full year's requirements would have to be floated inside seven months. Moreover towards the end of the floating season when the river becomes shallow and the rate of flow slow, rafts take approximately one month to travel from forest areas to Cuttack so that actually there are only about six months available in the year for floating so far as the forests are concerned. In the ordinary course cutting commences during the rains, but bamboos cannot be extracted over forest roads until October/November. This of course can be, and is being overcome by the accumulation of stocks at river depôts during the dry season. These stocks are then ready for despatch as soon as the floating season commences.

It will be appreciated, that the development of the areas is a factor which must take precedence over the actual establishment of the mill, as any mistake in regard to the quantity available, labour obtainable, means of transport or site, would be disastrous.

Cost of bamboos delivered to site at Cuttack.

The following is a detailed statement of the cost at which we anticipate being able to deliver 25,000 tons (air-dry bamboos) alongside a site on the banks of the Mahanadi river at or near Cuttack. The costs have been based on the prices we are paying at present for the different sections of the work. Some of these rates are possibly high and may be reduced.

Extraction and Transportation Costs.

On an annual output of 25,000 tons dry bamboo converted at 340 culms = 1 ton.

	Cost per ton.
	Rs. A. P.
1. Cutting and extracting	2 2 0
2. Transport to river depôts	8 0 0
3. Royalty	0 13 7
4. Cutting into 6' lengths	0 10 2
5. Depôt handling (i.e., unloading and stacking)	0 5 5
6. Raft construction	1 8 9
7. Floating	1 4 7
8. Overheads (Establishment, travelling, rent, etc.)	2 0 0
	<hr/>
	16 12 6
	<hr/>

Although we feel confident that the above costs can be reduced, we prefer for the purpose of our estimate to take the cost of bamboos alongside mill site at Cuttack as Rs. 17 per ton.

Pulp mill at or near Cuttack.

Site.—Several sites have been inspected and one near Cuttack appears the most promising. The assistance of Government will probably be necessary to enable us to obtain sufficient land for the mill, storage sheds, filtration tanks, and quarters for the staff and labour. The Bengal Nagpur Railway Company has already been approached with regard to the construction of a siding to the suggested site and have submitted their preliminary estimate.

We have also considered an alternative site near the forest areas but at the same time within reasonable distance of the Talcher branch of the Bengal Nagpur Railway.

Capital Outlay.—Although we have not yet decided as to the final layout of the mill, our examination of various estimates which have been put forward leads us to believe that Mr. Raitt's figure for the cost of such a bamboo pulp mill of Rs. 25,00,000 is fairly applicable to present day conditions and prices.

We are at present investigating certain modern innovations with regard to the washing of pulp, and it may be necessary on this account to modify our ideas of the equipment required. We have found in actual working that bamboo is a singularly 'free' fibre, i.e., easily separated from the cooking or washing liquor, and we may be able to take advantage of this fact in designing our plant.

We have asked our consultants in Europe to assist us in drawing up a scheme for the mill, and to send us their estimate for same. Drawings were originally submitted sometime ago, but at present are being revised. They are dependent upon final results of experiments at No. 2 Mill.

Cost of pulp manufactured.—The following is a statement shewing our estimate of the cost at which we expect to be able to manufacture bamboo pulp at Cuttack :—

		Cost per ton of pulp.	
		Rs.	A.
*1. Bamboo	. . . . .	42	8
2. Chemicals	. . . . .	26	0
3. Fuel	. . . . .	10	8
4. Labour—			
		Rs.	
Handling	. . . . .	5	
Digester House	. . . . .	3	
Evaporators	. . . . .	2	
Power	. . . . .	2	
Machinery	. . . . .	2	
General	. . . . .	4	
		—	18 0
5. Supervision	. . . . .	4	0
6. Running Repairs	. . . . .	5	0
7. Stores and Sundries	. . . . .	9	0
8. Depreciation on—			
(Rs. 18,00,000 at 7½ per cent.	1,35,000)		
(Rs. 7,00,000 at 2½ per cent.	17,500)		
		1,52,500	
		—	15 4
			130 4
9. Freight to Calcutta mills	. . . . .	10	0
		140	4

*NOTES—

- (1) *Bamboo.*—The cost of this material has been taken at Rs. 17 per ton alongside Mill site at Cuttack. The yield has been taken at 40 per cent., i.e., one ton of pulp from 2½ tons of bamboo. Although we have only assumed an yield of 40 per cent. into pulp we expect to obtain a figure considerably higher than this, probably about 44 per cent. by the use of the sulphate process of digestion in our Cascade system.
- (2) *Chemicals.*—Sulphate of soda has been taken at a price of Rs. 60 per ton at Cuttack and Lime (from Birmitrapur) at Rs. 30 per ton at Cuttack. The recovery has been estimated at 75 per cent. and the quantity of combined sulphate of soda and caustic at Rs. 20 per cent. of the equivalent of caustic on bamboo. Both the percentage of chemicals to be used are capable of improvement. We would mention that Mr. Raitt assumed a recovery figure of 80 per cent. in his estimates, and the quantity of combined caustic and sulphite salts as 19 per cent.
- (3) *Fuel.*—Talcher steam coal has been taken at Rs. 7 per ton at Cuttack and the quantity of coal per ton of pulp at 1½ tons.
- (4) *Depreciation.*—This has been based at 7½ per cent. on plant and 2½ on buildings on the total capital outlay of Rs. 25,00,000.

In order to assess the value of the pulp we have taken the price at which Easy Bleaching sulphite wood pulp can be landed at our mills to-day (based on a C. and F. price of £11-10) as Rs. 164. The foregoing figures therefore show a profit of Rs. 23-12 per ton of pulp produced. On a total capital of say Rs. 28,00,000 (Rs. 25,00,000 for Block and Rs. 3,00,000 for working capital) this profit is approximately 8-5 per cent. Such a return on capital is low especially to attract fresh capital, but as has been mentioned above, the costs are capable of reduction in several items which we confidently expect being able to effect.

Further, the present low price of wood pulp at which the bamboo pulp has been valued, has of course made the proposition a much less attractive one than it was a year or two ago. Should the price of wood pulp advance by say £1 per ton, then the margin of profit is sufficient to guarantee a satisfactory return on the capital involved in the scheme.

This project is one in which we are prepared to co-operate with other users of bamboo pulp and Messrs. The Bengal Paper Mill Co., Ltd., have already indicated that they are willing to join us in the scheme.

(4) Letter No. C. 209—31/6, dated the 8th July, 1931, from the Titaghur Paper Mills Company, Limited, Calcutta.

In response to your letter No. 378 of the 30th ultimo, we now have pleasure in appending hereto a statement showing the production in tons of protective classes of Writing and Printing papers separately for the years 1924-25 to 1930-31.

Enclosure.

The following is the tonnage of the Protective classes of Printings and Writings produced in our Mills for the years 1924-25 to 1930-31:—

	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
Writing Paper .	3,172	4,074	5,270	4,780	5,156	5,471	5,400
Printing Paper	9,025	8,536	8,693	9,720	11,018	10,000	11,455
TOTAL .	12,197	12,610	13,963	14,500	16,174	15,471	16,855

(5) Letter No. 387, dated the 1st July, 1931, from the Secretary, Tariff Board, to the Titaghur Paper Mills Company, Limited.

In continuation of my letter No. 378, dated the 29th June, 1931, I am to ask that you will be good enough to furnish the Board with certain further statements and information. For the sake of convenience in compilation and reply I have put the points in the form of a small supplementary questionnaire:—

- (1) Please prepare a statement showing the works cost per ton of grass pulp in 1924-25 in the same form as your reply to question 48 of the Board's questionnaire.
- (2) Please explain fully with reference to each item the reasons for the variations, if any, between the costs of 1924-25 and those of 1930-31.
- (3) Please prepare an estimate on the same lines as Form II (see question 47 of the Board's questionnaire) showing approximately

what would be the works cost per ton of finished paper if the following conditions were assumed:—

- (i) That the total output of paper is the same as for 1930-31 and
- (ii) That the primary materials represented in the total output of paper are in the following proportion:—
 - (a) Rags, hemp, paper cuttings, etc., in the same proportion as in 1930-31,
 - (b) Imported pulp not more than 15-20 per cent. and
 - (c) the balance consisting entirely of grass.
- (4) Please state in detail—
 - (a) what reductions in the manufacturing cost of grass pulp may be expected if the output of grass pulp is increased to the extent indicated in question 3 above,
 - (b) to what extent, if any, the cost of grass is likely to increase if it is necessary to obtain an additional supply of grass corresponding to the increased output of grass pulp.
- (5) Please state—
 - (a) whether the additional supply of grass could be obtained from the existing areas,
 - (b) if not, what other areas are open to you and the available supplies of grass in these areas,
 - (c) the average distance and cost of transport from these areas.
- (6) In what respects would (a) the quality and (b) the marketability of the papers made on the conditions assumed in question 3 above differ from those of the papers produced by you in 1930-31.

I am also to ask that you will be good enough to forward a copy of your Articles of Association. The Board would be glad to receive the reply to this letter not later than 22nd July. It should be addressed to 1, Council House Street, Calcutta.

(6) *Letter dated the 21st July, 1931, from the Titaghar Paper Mills Company, Limited.*

With reference to your letter No. 387 of 1st July, we have pleasure in submitting the following answers and statements in reply to the small Supplementary Questionnaire in the order thereof as follows, viz.:—

1. Works cost per ton of grass pulp in 1924-25 is shewn in a statement attached, in the same form as in reply to question No. 48 of the original questionnaire.

2. The reduction effected in 1930-31 as compared with 1924-25 amounts to Rs. 34.113 per ton of pulp as shewn by the following statement:—

Statement showing works cost of grass pulp manufactured in 1924-25 and in 1930-31.

		1924-25.		1930-31.	
		Cost per ton of Grass Pulp.			
		Bone Dry Basis.	Air Dry Basis.	Bone Dry Basis.	Air Dry Basis.
		Rs.	Rs.	Rs.	Rs.
Materials (Grass)	. . . . .	146.251	132.955	127.098	114.388
Chemicals	. . . . .	33.512	30.466	28.489	25.595
Total		179.763	163.421	155.537	139.983

	1924-25.		1930-31.	
	Cost per ton of Grass Pulp.			
	Bone Dry Basis.	Air Dry Basis.	Bone Dry Basis.	Air Dry Basis.
	Rs.	Rs.	Rs.	Rs.
<i>Conversion Charges.</i>				
Labour—				
Carrying, Picking and Dusting	13.042	11.856	7.738	6.964
Digesters	3.266	2.970	3.298	2.966
Sundry	2.576	2.343	2.955	2.659
Oils	.276	.251	.308	.277
Beltings	.333	.343	.240	.216
Repairs and Maintenance	5.474	4.976	10.404	9.364
Steam	26.253	23.866	17.597	15.837
Power and Light	2.124	1.931	1.635	1.472
Coal (Rotary Furnace)	1.392	1.265	1.101	.992
Water	1.251	1.137	1.175	1.057
Total Conversion Charges	56.037	50.943	46.451	41.806
Direct cost	235.800	214.364	201.988	181.789
On-cost charges	2.575	2.340	2.274	2.047
<i>Total costs</i>	236.375	216.704	204.262	183.836
No. of Cooks	4,861		6,297	
Total Production (Tons)	4,094.165	4,503.581	5,901.216	6,492.438
Percentage of Caustic used	—		15.815	15.815
Percentage of Yield	43.977	48.377	41.00	45.10

The reasons for the variation are as follows:—

- (a) *Materials (Grass).*—The cost of grass per ton of pulp shows a reduction of Rs. 19.153 due to a reduction in the actual cost of the raw material which is partly counterbalanced by apparent variation in the yield.
- (b) *Chemicals.*—The figures for 1930-31 show a reduction of Rs. 5.073 in the cost of chemicals per ton of pulp although the percentage of Caustic used in 1930-31 was somewhat higher than in 1924-25. The saving is due to better Caustic recovery which was 51 per cent. in 1930-31 as compared with 38 per cent. in 1924-25.
- (c) *Conversion Charges.*—The variations under this head may be tabulated as follows:—

	Variation per ton of Pulp. Rs.
(i) Labour—Reduction in 1930-31	4.893
(ii) Oils and Belting—Reduction in 1930-31	0.101
(iii) Repairs—Increase in 1930-31	4.930
(iv) Steam and Power—Reduction in 1930-31	9.156
(v) Coal (for Soda Roaster)—Reduction in 1930-31	0.291
(vi) Water—Reduction in 1930-31	0.076
Net reduction	9.586

- (i) The saving under this head is due to a decrease in the labour employed in carrying, picking and dusting grass. This reduction amounted to Rs. 5.304 per ton of pulp. The net saving is short of this amount owing to the fact that labour charges at the Digesters and Causticizing plant show increases.
- (ii) The small reduction here is attributable to the larger production.
- (iii) The cost of repairs was higher in 1930-31 because of the extra expense incurred in renewing false bottoms, etc., at the Digesters and extra repairs at the Soda Recovery plant.
- (iv) The reduction in the cost of steam and power is partly due to the fact that by alterations at the steam raising plant (*vide* our answer to question No. 24 of the original questionnaire) we have been enabled to burn cheaper coal, partly to the general fall in the price of coal and partly to definite economies effected in the use of steam.
- (v) The fall in price of coal together with a greater production of grass pulp has reduced the incidence of this item.
- (vi) Reduced costs in the Filtration Department have slightly reduced the cost of water supplies.
- (d) *On-cost charges*.—A small amendment in the basis of the allocation accounts for the increase under this head.

3. An accompanying statement shows for easy reference both the works cost per ton of paper for the year 1930-31 as already submitted and the estimated works cost on the conditions to be assumed, *viz.*—

- (i) that the total output of paper is the same as for 1930-31, and
- (ii) that Rags, Hemp, and paper cuttings are used in the same proportion as in 1930-31 but that the use of imported pulp is limited to 15/20 per cent., the balance of required material being made up of Sabai grass.

In making up this statement we assume that the new Digesting plant we are installing at No. 2 Mill would be adequate for the extra grass to be used. The plant for the manufacture and recovery of Caustic soda does not however possess the required capacity and considerable capital expenditure would be needed in this connection.

The statement shows that if we reduce the consumption of wood pulp and increase the consumption of grass to the extent indicated the result will be an increase in the cost of our paper. There is already some disparity between the cost of our paper and the prices at which foreign mills can work and this would become greater. The difference would be more accentuated if in making up the statement we employed the present low prices of wood pulp.

Actually we have entered wood pulp in the statement at our cost figure, but if we adjust both parts of the statement by reducing the cost of wood pulp to current market rates the total paper cost for 1930-31 would work out at Rs. 333-011 while the estimated future cost would become Rs. 353-777. The difference is approximately Rs. 20-12 per ton and this represents the net extra cost which would directly result from a restriction upon the use of wood pulp.

The adjustment in question brings out, more clearly perhaps than the statement itself, just how a reduction in the import of wood pulp directly affects the price of paper. We have not attempted to estimate what the indirect effect might be.

4. In answer to question No. 28 of the original questionnaire we have already submitted a statement which shows actual grass pulp costs for

1930-31. We now submit a statement of estimated grass pulp costs under the assumed conditions in regard to materials:—

(a) The reductions we can expect under the present arrangements would be in respect of conversion charges due to extra quantity of pulp made. Manufacturing costs would be increased because, as already stated, our plant for the manufacture and recovery of chemicals would be inadequate for the increased requirements.

(b) We have estimated that our increased total requirements of grass could be obtained at a slight increase in price. We have entered the grass at Rs. 51 per ton instead of Rs. 49.65 charged in 1930-31.

5. In our reply to question No. 7 of the original questionnaire we estimated that 10 lakhs maunds were obtainable from the areas we usually work. Our requirements under the assumed conditions would not exceed this quantity and we have accordingly regarded them as obtainable without much extra cost. But should the other grass mills in India be obliged to use grass to the same proportionate extent it is reasonable to expect that the greatly increased demand would lead to a substantial rise in the cost of the raw material.

(b) and (c) do not arise since the required quantity is obtainable from the customary areas.

6. (a) The proportion of grass used in the manufacture of paper at No. 1 Mill during 1930-31 is almost as high as that in the furnish now suggested. There would, therefore, be no material difference in the quality at this mill. The position at No. 2 Mill is somewhat different. The latter Mill has been used to a furnish mainly of Bamboo and wood pulp and the papers produced by it are of an entirely different character from that of those produced at No. 1 Mill. They are of softer texture and a change over to the furnish now suggested would change the characteristics of the paper considerably.

(b) As regards No. 1 Mill papers, there would be no change in their marketability. As regards No. 2 Mill, however, we have developed a market for papers with a soft texture, and it would remain to be seen whether the introduction of a large percentage of grass into the furnish would have an adverse effect on the marketability of the product.

Articles of Association.—Copies of these have already been forwarded to you.

STATEMENT No. 1.
(Reference Supplementary Questionnaire—Question No. 1.)
No. 1 MILL.

Statement showing Works Cost of Grass Pulp manufactured at the above Mill during the year ending 31st March 1925.

	Recovery.		Causticising.		Quantity.	Digester.		Total.		Bone Dry.		Air Dry.	
	Rs.	A. P.	Rs.	A. P.	cwt.	Rs.	A. P.	Rs.	A. P.	Cost per ton.	Rs.	Cost per ton.	Rs.
Materials (Grass)	...	...	1,03,252	9 5	138,206	5,98,775	4 9	5,98,775	4 9	146,251	132,965	...	...
Chemicals	...	...	...	...	24,635	33,951	12 6	1,37,204	5 11	33,512	30,466	...	...
Potal Cost of Materials and Chemicals.	...	...	1,03,252	9 5	210,841	6,32,727	1 3	7,35,979	10 8	179,763	163,421	...	...
CONVERSION CHARGES.													
Labour—													
Carrying, Picking and Dusting	...	...	...	...	...	53,304	11 4	53,304	11 4	13,042	11,856	...	...
Digesters	...	...	...	...	...	13,376	10 11	13,376	10 11	3,206	2,970	...	...
Sundry	4,496	9 0	6,051	13 3	...	364	4 11	10,550	6 3	2,576	2,343	...	...
Oils	442	2 11	322	0 2	...	596	13 2	1,128	8 0	276	251	...	...
Beltings	642	2 3	328	9 3	...	1,566	8 8	1,566	8 8	393	348	...	...
Repairs and Maintenance	4,683	5 1	2,659	3 6	...	15,057	4 10	22,409	13 5	5,474	4,976	...	...
Steam	34,874	1 8	21,540	6 6	...	51,068	14 5	1,07,483	6 7	26,253	23,866	...	...
Power and Light	5,618	15 10	2,191	5 0	...	885	1 6	8,693	6 4	2,134	1,911	...	...
Coal (Recovery Furnace)	5,699	0 10	...	...	...	5,120	6 3	5,699	9 10	1,392	1,265	...	...
Water	...	...	...	...	...	1,39,863	3 4	5,120	6 3	1,251	1,137	...	...
Total Conversion Charges	56,438	5 7	33,123	5 8	...	7,72,590	4 7	2,29,421	14 7	56,037	50,943	...	...
Total Direct Costs	56,438	5 7	1,36,375	15 1	...	7,72,590	4 7	9,65,404	9 3	235,800	214,864	...	...
On-Cost Charges	1,328	2 6	3,892	1 6	...	5,320	2 8	10,540	6 8	2,575	2,340	...	...
Total Costs	57,766	8 1	1,40,268	0 7	...	7,77,910	7 3	9,75,944	15 11	238,375	216,704	...	...
No. of Cooks	...	...	...	...	...	4,861	0 0	...	...	...	...	...	...
Total Production (Bone Dry)	19,699 cwt.		13,215.368 cwt.		Yield 43.977	= 4,094.165 tons		...		...		...
" " (Air Dry)	...		...		" 48.977	= 4,508.581 "		...		...		...
Percentage of Caustic used	...		...		...	14.30%		...		...		...

STATEMENT No. 2.

(Reference Supplementary Questionnaire—Question No. 3).

The undernoted statement of costs shows the comparative positions with the varying conditions as explained below.

	No. 1 Actual Cost 1930-31.			Percentage of Furnish. Per cent.	No. 2 Estimated Costs.		
	Total Tons.	Total Cost.	Cost per Ton.		Total Tons.	Total Cost.	Cost per Ton.
Grass	16,663	8,27,405	42.960	66.57	36,670	17,95,380	93.219
Bamboo	5,323	1,87,352	9.727	...	...	...	...
Rags, etc.	162	16,206	.841	...	162	16,206	.841
Hemp Ropes	759	64,258	3.336	8.73	759	64,253	3.336
Waste Papers	1,505	1,35,637	7.042	...	1,505	1,35,637	7.042
Total Primary Materials.	24,615	12,30,858	63.906	75.90	39,096	20,11,481	104.438
Purchase Pulp	10,026	20,29,113	105.354	15.73	3,585	7,21,502	37.461
AUXILIARY RAW MATERIALS.							
China Clay	2,880	1,53,374	7.963	8.97	2,880	1,53,374	7.963
Alum	1,265.30	1,09,288	5.674	...	1,265.30	1,09,288	5.674
Rosin	563.15	1,89,823	9.856	...	563.15	1,89,823	9.856
Alkali	249.20	32,639	1.694	...	901.97	1,18,136	6.133
Lime	4,107.20	1,84,922	7.005	...	14,885.70	4,88,997	25.389
Salt	2,343.78	57,199	2.970	...	2,343.78	57,199	2.970
Sulphuric Acid	1.90	652	.034	...	1.90	662	.034
Hydrochloric Acid	15.15	5,068	.263	...	15.15	5,068	.263
Starch	15.90	3,407	.179	...	15.90	3,407	.179
Glue	1.05	915	.047	...	1.05	915	.047
Sulphur	4.35	538	.028	...	4.35	538	.028
Sodium Sulphide	67.75	11,488	.596	...	67.75	11,488	.596
Caustic Soda	540.90	1,28,015	6.646	...	540.90	1,28,015	6.646
Silicate of Soda . . . . .	.85	192	.010	...	.85	192	.010
Bewoid Size	1.60	571	.030	...	1.60	571	.030
Dyes	28.56	44,413	2.306	...	28.56	44,413	2.306
Total Auxiliary Raw Materials.	12,056.64	8,72,504	45.301	100	23,517.91	13,12,076	68.124
Conv'n. Charges for Manufacture of B. and C.	...	2,23,832	11.622	...	...	2,23,832	11.622
Total Cost of Auxiliary Raw Materials.	...	10,96,336	56.923	...	...	15,35,908	79.746
Mill Labour . . . . .	...	8,10,723	42.094	...	...	8,58,401	44.569
Power and Fuel . . . . .	...	4,23,636	21.996	...	...	4,99,346	25.926
Current Repairs and Maintenance.	...	7,40,041	38.424	...	...	7,60,803	39.602
Supervision and Establishment.	...	3,88,531	20.173	...	...	3,88,531	20.173
Miscellaneous Rents, Taxes, etc.	...	40,459	2.100	...	...	47,804	2.482
Other Items (Wrappers)	...	1,75,355	9.105	...	...	1,75,355	9.105
Total Cost . . . . .	...	25,78,745	133.892	...	...	27,30,240	141.757
Total Cost F. O. R. Mills	...	69,35,052	365.075	...	...	69,99,131	363.402
Total Paper Production (Tons)	...	19,260	...	...	...	19,260	...

Section (1) shows our actual costs during 1930-31.

Section (2) shows our estimated costs on the assumption that the Primary Materials represented in the total output of Paper are in the following proportion:—

(a) Rags, Hemp and Paper Cuttings, etc., same as in 1930-31.

(b) Imported Pulp not more than 15-20 per cent.

(c) The balance consisting entirely of Grass.

The above Costs have been based on the working of our present Plant. No extra E. B. Plant or additional Caustic Recovery). To digest the extra grass it would be necessary to purchase our extra Caustic requirements and this is taken into account in working out this cost.

STATE
Reference Supplementary Que
Statement showing Unbleached Grass Pulp Cost

	Recovery.	Causticising.	No. 1		
			Digerter.		Total cost.
			Quantity.	Value.	
MATERIALS AND CHEMICALS.	RS. A. P.	RS. A. P.	Cwtg.	RS. A. P.	RS. A. P.
Materials . .	..	..	(4,80,000M) 334,433'00	8,97,688 15 8	8,97,688 15 8
Caustic . .	..	69,604 7 2	45,534'41	98,250 8 2	1,67,854 15 4
Caustic Soda .	..	..	7,356'21	84,596 6 8	84,596 6 8
Total .	..	69,604 7 2	..	10,80,535 14 6	11,50,140 5 8
CONVERSION CHARGES.					
Labour—					
Carrying, Pi- cking, Du- sting.	..	..	..	40,672 3 8	40,672 3 8
Digestors .	..	..	..	21,462 11 9	21,462 11 9
Sundry .	8,979 0 3	8,461 14 9	..	..	17,440 15 0
Oils . .	756 5 2	618 13 1	..	440 1 5	1,819 3 8
Belting .	626 1 10	252 4 11	..	535 6 6	1,413 13 3
Repairs .	19,478 0 0	4,944 0 0	..	36,984 9 11	61,406 9 11
Steam .	31,091 13 10	19,563 14 7	..	55,307 8 5	1,06,863 4 10
Power .	4,160 8 8	2,037 11 6	..	3,453 1 6	9,651 5 8
Coal and Oil (Rotary).	6,499 2 0	..	..	..	6,499 2 0
Water . .	4,100 13 0	1,069 12 4	..	2,000 0 0	7,170 9 4
Total .	76,591 12 9	36,943 7 2	..	1,60,864 11 2	2,74,399 15 1
Direct cost .	76,591 12 9	1,06,547 14 4	..	12,41,400 9 8	14,24,540 4 9
On-Cost Charges	1,020 0 0	1,020 0 0	..	11,384 7 1	13,424 7 1
Total c .	77,611 12 9	1,07,567 14 4	..	12,52,785 0 9	14,37,964 11 10

Grass Pulp Production { Bone Dry Basis . . Tons 6,855'876
Air Dry Basis . . Tons 7,541'460

MENT No. 3.

Questionnaire--Question No. 4.

on a basis of 960,000 maunds yearly consumption.

MILL.		No. 2 MILL.				BOTH MILLS.		
Cost per ton.		Quantity.	Value.	Cost per ton.		Total.	Bone Dry.	Air Dry.
Bone Dry.	Air Dry.			Bone Dry.	Air Dry.			
Rs.	Rs.	Cwts.	Rs. A. P.	Rs.	Rs.	Rs. A. P.	Rs.	Rs.
130'937	119'034	334,433'00	8,97,688 15 8	130'937	119'034	17,95,377 15 4	130'937	119'034
24'483	22'258	22,023'16	1,35,946 0 2	19'829	18'026	3,03,800 15 6	22'156	20'142
12'840	11'217	30,867'46	3,54,975 13 3	51'777	47'070	4,39,572 3 11	32'058	29'144
187'780	152'509	..	13,88,610 13 1	202'543	184'130	25,33,751 2 9	185'153	168'320
5'932	5'393	..	40,672 3 8	5'932	5'393	81,344 7 4	5'932	5'393
3'131	2'846	..	21,462 11 9	3'131	2'846	42,925 7 6	3'131	2'846
2'544	2'313	..	17,440 15 0	2'544	2'313	34,881 14 0	2'544	2'313
265	241	..	1,819 3 8	265	241	3,638 7 4	265	241
206	187	..	1,413 13 8	206	187	2,827 10 6	206	187
8'957	8'142	..	81,406 9 11	8'957	8'142	1,22,813 3 10	8'957	8'142
15'587	14'170	..	1,06,868 4 10	15'587	14'170	2,18,726 9 8	15'587	14'170
1'408	1'280	..	9,651 5 8	1'408	1'280	19,302 11 4	1'408	1'280
948	862	..	6,499 2 0	948	862	12,998 4 0	948	862
1'046	951	..	7,170 9 4	1'046	951	14,341 2 8	1'046	951
40'024	36'385	..	2,74,399 15 1	40'024	36'385	5,48,799 14 2	40'024	36'385
207'784	188'894	..	16,68,010 12 2	242'567	220'515	30,87,551 0 11	225'175	204'705
1'958	1'780	..	13,424 7 1	1'958	1'780	26,848 14 2	1'958	1'780
209'742	190'874	..	16,76,435 3 3	244'525	222'295	31,14,399 15 1	227'133	206'485
Yield	..	41'00%	6,855'876	13,711'752				
Yield	..	45'10%	7,541'403	15,082'926				

(7) *Letter dated the 23rd July, 1931, from the Titaghur Paper Mills Company, Limited.*

We enclose three of our Sample Books as we thought you would like to have these to give you an idea of the range of qualities now being turned out by our Mills.

We take this opportunity to quote extracts from recent letters which we have received from our Madras agents which have bearing on the question of the mechanical contents in paper as dealt with in our reply to question No. 37 of your questionnaire.

The first extract relates to the requirements of the Mysore Government for which contracts were recently decided. The Badami items were, in previous years, secured by the Deccan Mills, but on this occasion this valuable business has been lost to importers in consequence of the application of the existing Tariff Schedule, which makes the substitution of Indian papers possible by imported papers containing mechanical wood pulp.

In their letter No. 1 B./797, dated the 14th July, 1931, our Madras agents write:—

“It would seem useless to endeavour to approach the Mysore Government with a view to keeping the Badami items in the country, as the price put forward by Messrs. Advani & Co. is only As. 2-4 per lb. This, we imagine, is much below any price you could come down to for even the most inferior types of Badami.

If, as we imagine, Messrs. Advani & Co. are going to supply some such paper similar to that supplied to the Government of Madras, it is another illustration of the substitution of inferior quality papers which can be effected with the present reduction of the Tariff in force. Later on, we shall endeavour to secure samples of the paper actually supplied.”

In their letter No. 1/68, dated the 18th July, 1931, they write as follows:—

“Business in Mechanical Printings, however, appears to be on the increase. We notice that Messrs. Spicer Bros. are now sending circulars *advocating the use of this type of paper*, and it is certainly an attractive purchase for those publishers who do not care about the quality of paper they use.”

We are endeavouring to secure one of the circulars above referred to, and if we are successful shall be pleased to pass it on to you.

(8) *Letter dated the 5th August, 1931, from the Titaghur Paper Mills Company, Limited.*

As there was some uncertainty when we appeared before you on the 2nd instant as to what effect our proposals in connection with question No. 37 would have on the Vernacular Press, we have carefully sounded the opinion of the majority of these Newspapers in Calcutta and have found none whose interests would be adversely affected in any way by our proposals. We have been able to secure a number of written certificates to this effect, which we attach hereto for your perusal.

We feel that we cannot overemphasise the importance to the development of the Industry of the proposals outlined by us. We believe that you were satisfied that the Tariff Board in their Report at the time of the 1924-25 Enquiry intended to exclude Newsprint only from the Protective Tariff, and that this intention is clearly stated in paragraph 150 of the

Report. The reason why the expression "Newsprint" was replaced by the words "Printing containing 65 per cent. or more Mechanical Wood pulp" was because it was considered at that time that the only papers which would be able to enter the country under such ruling would be those of the usual Newsprint quality. The working of the tariff, however, has since shown that this is not so, and that the present wording of the Tariff has enabled importers to bring into the country large quantities of cheap Printing papers of such a quality, and at a very low price in consequence of the low rate of duty, that the large intermediate field for cheap *Printing Papers*, which would otherwise have been available, has been completely lost to Indian Mills.

We have from time to time discussed this matter with the Customs Authorities, and now understand from Mr. Clements, their expert on paper and paper analysis, that it would be a simple matter for them to distinguish between a regular or "standard" Newsprint and a Printing paper containing a large percentage of Mechanical Wood pulp. If this is so, we would suggest that the word "Newsprint" be substituted for the word "Printings" in the tariff in that part of the Schedule relating to Mechanical papers. Also, as far as we understand, this would remove a great difficulty for both the Customs and the Importers, as because of the definite distinction between Newsprint and Printings that would result, the Customs would be able to adopt the simple phloroglucinal test for Newsprint. It is the cheap Printings that are creating a difficulty at the Customs at present because it is in these that so many border line cases arise. May we suggest a reference to the Collector of Customs, Calcutta, on this point?

You will remember that we suggested at our oral examination the other day that the item in the Customs Returns of "Printings, not Protected" did not represent the whole of the imports of Mechanical Printing papers containing 65 per cent. of the kind which competed with the lower qualities of Indian Mills productions, but that a great many imports of this kind are included under the heading "Newsprint" because the manufacturers have declared the paper as such in their invoices. We have confirmed this from the Customs and think, therefore, the figures shown by the Customs under the heading "Printings, not Protected" will not offer an entirely complete comparison of the total tonnage imported from year to year. They will only serve as a guide as to the average price at which these papers are being imported.

In comparing the cost of these imported papers with the possible cost at which Indian Mills can produce competitive qualities of paper, we hope you will take into consideration the fact that the costs we have produced to the Board so far in respect of our Mills relate, in the main, to the cost of superior quality Printing and Writing papers, and that if a market were made available for cheaper qualities of Printing paper, there are means at our disposal for cheapening our furnish in order to bring our price within the range of the price of the imported paper, provided that Protection is given. Such cheapening of the furnish could be brought about by the introduction of a larger percentage of local waste papers, a reduction in sizing, an increase in the proportion of china clay, and a saving could be effected by the reduced heating and machining times required for these lower classes of paper. While we cannot hope to compete with papers containing a large percentage of Mechanical, such as 75 per cent., we can compete in the field for middle quality papers containing smaller proportions.

The foregoing has been written explaining the position so far as it affects our own Mills, but we must take into consideration the position of the Industry as a whole. We believe the Lucknow Mills are contemplating the introduction of another machine, and also, it must be expected that the Punjab Mills will be brought into commission again at some time in the near future, besides which, of course, there are likely to be increased rates of production at Raneegunge, Rajahmundry and other mills, including our

own. As a matter of fact, we estimate that the Industry is capable of immediate expansion of production to the following extent:—

	Tons.
Punjab	6,000
*Lucknow	3,000
Bengal	1,000
Rajahmundry	1,000
Titaghur	1,500
	<hr/>
	12,500
	<hr/>

If this be so, and if the Industry is to be encouraged to expand, the scope of Protection should be widened to enable the additional production to find a ready outlet. If Protection is not given for these cheaper qualities of paper, it is our opinion that the development of the Industry may be unduly narrowed and the result may, for a time, be acute local competition which was the early history of the Industry and may again hinder healthy development

Enclosure.

List of Newspapers.

1. The Hitabadi, Calcutta.
2. The Mohammadi Publishing Company, Calcutta.
3. The Chonch, Calcutta.
4. The Vagna-Doot, Calcutta.
5. The Sultan, Calcutta.
6. The Daily Jamhoor, Calcutta.
7. The Lokmanya, Calcutta.
8. The Mussalman Publishing Co., Ltd., Calcutta.
9. The Hind, Calcutta.
10. The Daur-E-Jadid, Calcutta.
11. The Nasihat, Calcutta.
12. The Mussalman, Calcutta.
13. The Calcutta Evening News, Calcutta.
14. The Times of India, Bombay.
15. The Shefa, Calcutta.

- (9) *Letter dated the 8th August, 1931, from the Titaghur Paper Mills Company, Limited.*

We have the honour to submit the following notes and statements in accordance with the wishes of the Board as expressed at the oral examination held on 2nd instant, viz.:—

- (1) Explanatory note in regard to pulp-making capacity in 1931 as compared with 1924.
- (2) Note regarding "Yield" figures.
- (3) Statement showing works cost of grass pulp manufactured in 1926-27.
- (4) Comparative statement of yield figures over seven years.
- (5) Statement showing the quantity of coal consumed per ton of unbleached pulp in 1924-25, 1926-27 and 1930-31.
- (6) Statement showing cost of converting one ton of unbleached pulp into finished paper, 1924-25 grass, 1930-31 grass and bamboo separately. The figures also give the total cost including material.

* Their new machine.

- (7) Statement showing the expenditure required in the conversion of one ton of imported pulp into paper.
- (8) Note regarding Pulp wood and Wood pulp with three accompanying magazines and one Report.
- (9) Statement showing the average freight paid by our mills in 1930-31 for that portion of our output delivered to up-country stations (Rs. 28-4-4 per ton).
- (10) Statement showing the extent to which the freight upon up-country deliveries in 1930-31 would have been increased had the rates to be enforced by East Indian Railway with effect from 1st September 1931 been charged by all Railways in 1930-31.
- (11) Statement showing the value of shares held by the Managing Agents and the percentage that such holdings represent of the total capital of the Company.

We have the honour to add that the further information regarding imported paper asked for on the 6th instant will be forwarded later.

Enclosure No. 1.

Pulp making capacity of the two Mills belonging to the Titaghur Paper Mills Company, Limited.

In evidence submitted to the Tariff Board in 1924 it was stated that the full capacity of the Mill as equipped for pulp manufacture was "17/18,000 tons of pulp annually".

In our recent evidence we gave a figure of 10,500 tons.

The difference is due to the fact that our recent figure is based upon working results with the digesters at present in use at both mills, whereas in 1924 the figure was estimated upon the nominal capacity of the digesters then available, whether in use or not.

The digesters in 1924 at each mill comprised in all 28 upright digesters of varying types, one large revolving digester and four small rag digesters. We now have in use 19 vertical digesters (in place of 28) and only two rag boilers. Seven old vertical digesters—part of the original equipment of No. 1 Mill—were removed from the heart of the mill to give room for the construction of the new beater house. These were of antiquated type and are utilized, as required, for hot water storage tanks, etc. The large revolving digester at No. 1 Mill was taken out and a large vertical digester (installed originally for Bamboo experimental work in 1911) is now utilized as a black liquor storage tank. Certain of the old digesters at No. 2 Mill have been utilized as liquor containers in connection with the operation of the Cascade process.

Thus to-day the actual digesting plant available for cooking materials is less by 32 per cent. in the case of grass and bamboo boilers and by 50 per cent. in the case of rag boilers and if these figures be applied to the productive capacity estimated in 1924 it will be seen that the difference is largely accounted for in this way.

Another factor contributing to the apparent discrepancy is the fact that in estimating pulp productive capacity to-day we took no account of the part played by Pulpers and Kollergangs in the preparation of pulp from waste papers, etc., and gave a figure which took note of active Digester capacity only.

Enclosure No. 2.

Note regarding Titaghur Paper Mills "Yield" Figures.

The statements submitted with our letter of 21st July in answer to the Supplementary Questionnaire showed that whereas in 1924-25 the yield of grass upon an air-dry basis was apparently 48.377 per cent. it had fallen in

1930-31 to 45-10 per cent. Such figures show the estimated yield into *pulp*, which is an intermediate product the actual quantity of which is not readily ascertainable with strict accuracy. Hence, although based on actual tests, they are nevertheless only approximate and of no great value to a paper mill whose basic comparisons are necessarily between the quantities of material used and of *paper* produced.

Some explanation of the variation in yield may be found in the fact that in 1924-25 with approximately the same digesting plant in use we cooked at No. 1 Mill about 30 per cent. less grass than in 1930-31.

Further, during 1924-25 we conducted extensive experimental work and although as a result, the yield into pulp was apparently improved the ultimate yield into paper did not correspondingly benefit.

We submit a statement showing works costs of grass pulp manufactured at No. 1 Mill during the year ended 31st March 1927 when with a total production of 6,143 tons the yield into air-dry pulp was 45.72 per cent. This is slightly above the figure reported for 1930-31 as stated in Annexure I (a) in our original written evidence.

We feel that the percentages of yield into pulp are apt to give an erroneous impression of the actual standards of efficiency attained, and should prefer to base comparisons upon the figures of yield into paper. These worked out upon the quantities of grass used and paper produced therefrom (as given in Form III) are as follows:—

	Tons Grass.	Tons Paper.	Yield.
1924-25 . . .	18,790.70	5,688.42	30.282
1925-26 . . .	12,582.15	3,841.61	30.532
1926-27 . . .	15,917.90	5,016.94	31.517
1927-28 . . .	14,464.75	4,636.19	32.031
1928-29 . . .	14,185.85	4,346.54	30.640
1929-30 . . .	15,553.30	5,279.33	33.943
1930-31 . . .	15,663.30	5,486.92	35.030

These figures show steady improvement except in 1928-29. The falling off in that year is attributable to the inferior nature of the grass crop harvested in 1927-28. The figures for 1929-30 and 1930-31 reflect the improvement resulting from the installation of new plant at Titaghur.

Closer examination of the improvement in our yield figures over the past seven years is assisted by the figures given in a further statement herewith.

Section A thereof shows the postulated yields from each material based upon recognised ratios generally accepted in the trade. The actual tonnage of paper produced in each year is less than the tonnage figure arrived at by calculation on the basis of the accepted yield percentages. The loss in yield each year is shewn in the statement and in terms of tons of paper.

Section B shows the same production figures adjusted by distributing annual losses in terms of paper in strict proportion so that each yield figure bears its fair share of the total loss in yield.

Section C takes into account the Wrapper question. The paper production from 1924-25 to 1927-28 (as shown in Form III) includes wrappers made from waste materials. This gives the years in question undue advantage over the others when yield figures are considered.

Hence Section C shows the production *minus* the wrappers made and thus enables a fairer comparison to be made between the yield figures of the respective years.

It will be noticed that the yield figures for 1930-31 in Section C approximate very closely to the standard percentage ratios.

All the figures in the above statement are based upon consumption figures appearing in Form III already submitted.

Enclosure No. 3.
Statement showing Works Cost of Grass Pulp manufactured at the above Mills during the year ending March 1927.

	Recovery Plant.	Causticising Plant.	Quantity Digested.	Digestor Plant.	Total Cost.	Cost per ton of Grass Pulp.	
	Rs. A. P.	Rs. A. P.	Cwt.	Rs. A. P.	Rs. A. P.	Bone dry Basis.	Air dry Basis.
Materials (Grass)	...	...	26,876.00	7,92,120 9 9	7,92,130 9 9	Rs. 141.850	Rs. 127.665
Chemicals	...	...	41,653.07	87,964 8 2	2,46,460 8 11	44.135	39.721
Total Cost of Materials and Chemicals	...	1,58,496 0 9	310,416.07	8,80,085 1 11	10,38,581 2 8	185.985	167.386
CONVERSION CHARGES—							
Supervision:	...	...	...	...	...	...	...
Labour—Carrying, Picking and Dusting	...	...	...	50,384 8 3	50,384 8 3	9.023	8.122
Digesters	...	...	...	15,448 4 8	16,448 4 8	2.766	2.489
Sundry	5,467 10 6	6,316 5 3	...	457 2 8	11,763 15 9	2.110	1.899
Oils	532 6 9	412 13 4	...	806 7 1	1,392 6 9	.249	.224
Beltings	536 9 1	714 2 2	...	21,740 15 8	2,057 2 4	.368	.331
Repairs and Maintenance	8,613 14 7	3,121 7 8	...	78,966 4 9	33,476 5 11	5.995	5.395
Steam	44,128 6 2	21,214 8 6	...	799 13 3	1,39,309 3 5	24.947	22.453
Power and Light	6,111 9 8	1,933 7 3	...	...	7,904 14 2	1.416	1.274
Coal (Recovery Furnace)	3,123 12 0	...	...	1,982 4 1	3,123 12 0	.559	.503
Water	4,569 2 6	1,162 2 9	...	...	7,704 9 4	1.389	1.242
Total Conversion Charges	72,064 7 3	34,334 14 11	...	1,65,585 12 5	2,72,585 2 7	48.813	43.932
Total Direct Cost	72,064 7 3	1,93,450 15 8	...	10,45,670 14 4	13,11,166 5 3	254.798	211.318
On-Cost Charges	1,120 8 0	1,120 8 0	...	11,562 9 6	13,803 9 6	2.472	2.225
Total Costs	73,184 15 3	1,94,551 7 8	...	10,57,233 7 10	13,24,969 14 9	257.270	213.543
No. of Cooks	...	...	...	...	...	5.919	...
Total Production	1,871.50	1,444.78	...	...	...	6,584.229	6,142.652
Percentage of Caustic Used	...	...	...	...	...	15.498	...
" Yield into Un-bleached Pulp	...	...	...	...	...	41.56%	45.72%

Enclosure No. 4.

Yield

	Estimat- ed Yield into Paper.	1924-25.			1925-26.			1926-	
		Mats.	Paper.	Yield.	Mats.	Paper.	Yield.	Mats.	Paper.
A	Per cent	Tons.	Tons.	Per cent.	Tons.	Tons.	Per cent.	Tons.	Tons.
Grass (Raitts)	35	18,791	6,577	..	12,582	4,404	..	15,918	5,571
Bamboo (do.)	38	2	1	..	31	12	..	143	54
Rags . . .	60	807	484	..	649	389	..	949	569
Ropes Hemp .	60	398	238	..	535	321	..	507	304
Waste Papers .	75	1,981	1,486	..	2,232	1,674	..	2,024	1,518
Woodpulp .	85	6,725	5,716	..	8,932	7,592	..	9,090	7,727
China Clay .	60	3,241	1,944	..	3,736	2,242	..	3,225	1,935
Total .	..	..	16,446	..	..	16,634	..	..	17,678
Actual Paper Prodn.	..	..	15,556	..	..	16,070	..	..	17,118
Loss . . .	..	..	890	..	..	564	..	..	560
B									
Grass (Raitts)	35	18,791	6,221	33.11	12,582	4,255	33.82	15,918	5,395
Bamboo (do.)	38	2	1	..	31	11	35.48	143	52
Rags . . .	60	807	458	56.75	649	376	57.94	949	551
Ropes Hemp .	60	398	225	56.53	535	310	57.94	507	294
Waste Papers .	75	1,981	1,406	70.97	2,232	1,617	72.45	2,024	1,470
Woodpulp .	85	6,725	5,406	80.39	8,932	7,335	82.12	9,090	7,482
China Clay .	60	3,241	1,839	56.74	3,736	2,166	57.98	3,225	1,874
Total .	..	..	..	..	..	..	..	..	..
Actual Paper Prodn.	..	..	15,556	..	..	16,070	..	..	17,118
C									
Grass (Raitts)	35	18,791	5,987	31.86	12,582	4,105	32.63	15,918	5,286
Bamboo (do.)	38	2	1	..	31	11	35.48	143	51
Rags . . .	60	807	441	54.65	649	363	55.93	949	540
Ropes Hemp .	60	398	216	54.27	535	299	55.89	507	288
Waste Papers .	75	1,981	1,353	68.30	2,232	1,560	69.89	2,024	1,440
Woodpulp .	85	6,725	5,202	77.35	8,932	7,077	79.23	9,090	7,330
China Clay .	60	3,241	1,770	54.61	3,736	2,090	55.94	3,225	1,836
Total .	..	..	14,970	..	..	15,595	..	..	16,771

Statement.

27.	1927-28.			1928-29.			1929-30.			1930-31.		
Yield	Mats.	Paper.	Yield.	Mats.	Paper.	Yield.	Mats.	Paper.	Yield.	Mats.	Paper	Yield.
Per cent.	Tons.	Tons.	Per cent.	Tons.	Tons.	Per cent.	Tons.	Tons.	Per cent.	Tons.	Tons.	Per cent.
..	14,465	5,063	..	14,186	4,965	..	15,553	5,444	..	15,663	5,482	..
..	337	128	..	995	378	..	496	188	..	5,526	2,100	..
..	645	387	..	381	229	..	289	173	..	162	97	..
..	407	244	..	438	263	..	415	249	..	759	456	..
..	2,146	1,610	..	1,803	1,352	..	2,103	1,578	..	1,505	1,128	..
..	10,320	8,772	..	12,221	10,388	..	11,115	9,448	..	10,026	8,522	..
..	3,190	1,914	..	3,450	2,070	..	3,082	1,849	..	2,880	1,728	..
..	..	18,118	..	..	19,645	..	..	18,929	..	..	19,518	..
..	..	17,675	..	..	18,980	..	..	18,741	..	..	19,260	..
..	..	443	..	..	665	..	..	188	..	..	253	..
33-89	14,465	4,939	34-14	14,186	4,797	33-82	15,553	5,390	34-66	15,663	5,411	34-55
36-36	337	125	37-09	995	365	36-68	496	186	37-50	5,526	2,078	37-51
58-06	645	377	58-45	381	221	58-00	289	171	59-17	162	96	59-26
57-99	407	238	58-48	438	254	58-00	415	247	59-52	759	450	59-29
72-63	2,146	1,571	73-21	1,803	1,306	72-43	2,103	1,562	74-27	1,505	1,113	73-95
82-31	10,320	8,558	82-93	12,221	10,037	82-13	11,115	9,354	84-16	10,026	8,411	83-89
58-11	3,190	1,867	58-53	3,450	2,000	57-97	3,082	1,831	59-40	2,280	1,706	59-24
..
..	..	17,675	..	..	18,980	..	..	18,741	..	..	19,260	..
33-21	14,465	4,880	33-74	14,186	4,784	33-72	15,553	5,390	34-66	15,663	5,411	34-55
35-66	337	124	36-80	995	364	36-58	496	186	37-50	5,526	2,078	37-51
56-90	645	373	57-83	381	220	57-74	289	171	59-17	162	96	59-26
56-80	407	235	57-74	438	253	57-76	415	247	59-52	759	450	59-29
71-15	2,146	1,553	72-37	1,803	1,303	72-27	2,103	1,562	74-27	1,505	1,113	73-95
80-06	10,320	8,457	81-95	12,221	10,011	81-92	11,115	9,354	84-16	10,026	8,411	83-89
56-94	3,190	1,845	57-84	3,450	1,995	57-83	3,082	1,831	59-40	2,880	1,706	59-24
..	..	17,487	..	..	18,980	..	..	18,741	..	..	19,260	..

Enclosure No. 5.

Coal consumption.

Coal consumed per ton of Unbleached Pulp, viz.:—

	Tons of Coal.		
	1924-25.	1926-27.	1930-31.
Grass Pulp (No. 1 Mill) . . .	2,023	1.95	1,830
Bamboo Pulp (No. 2 Mill) . . .	...	...	2,499

NOTE.—It may be mentioned that in 1924-25, first class steam coal was used, while in 1930-31, a cheaper grade of slack coal was used.

Enclosure No. 6.

Statement showing cost of converting one ton of Unbleached Pulp into Finished Paper.

	Grass Furnish.		Bamboo Furnish.	
	1924-25.	1930-31.	1930-31.	
	Rs.	Rs.	Rs.	
Pulp cost 1 ton	216.704	1 ton 183.836	1 ton 183.644	
<i>Conversion cost—</i>				
Bleach 18%	38.200	15% 21.733	15% 24.208*	
Sizing (Rosin and Alum)	14.450	11.502	11.502	
Colour . . . . .	.425	2.125	2.125	
Total Auxiliary Raw Materials	53.075	35.360	37.935	
<i>Charges—</i>				
Labour	28.306	23.456	23.456	
Power and Fuel	40.036	18.787	18.787	
Repairs	23.604	21.429	21.429	
Supervision	6.820	9.047	9.047	
Packing Charges	14.406	19.201	19.201	
Miscellaneous	1.806	2.160	2.160	
Total cost above material	114.978	94.080	94.080	
Total Conversion Cost	168.053	129.440	132.015	

The above pulp will produce 1,904 lbs. Finished Paper.

* Although the percentage of Bleach used in 1930-31 was the same for Bamboo as for grass, the cost of bleaching liquor at No. 2 Mill is higher than at No. 1 Mill hence the higher figure for bleaching Bamboo Pulp made at No. 2 Mill.

Enclosure No. 7.

Cost of converting one ton of Imported wood pulp into paper.
(Exclusive of the cost of imported auxiliary materials.)

	Quantity.	Cost. Rs.
Bleaching Cost	9%	15.733
Sizing Cost		11.502
Cost of Auxiliary Materials		27.235
Labour		23.456
Power and Fuel		18.787
Repairs		21.429
Supervision and Establishment		9.047
Packing Charges		19.201
Miscellaneous Charges		2.160
Cost of Conversion		94.080
Total Cost		121.315

Enclosure No. 8.

WOOD PULP.

North America occupies the dominating position in the World's Pulp and Paper Industry.

This is illustrated by statistics of Paper production and consumption published last year in the Weekly Business Review of the American Pulp and Paper Association (*vide* Paper Trade Journal of 8th May, 1930, copy sent herewith. This is the article referred to in Titaghur's reply to Tariff Board's Question No. 15. It was republished in the World's Paper Trade Review of 27th June, 1930.)

We set out the figures with percentages calculated by ourselves, as follows:—

Production and Consumption of Paper in 1927.

	Production Tons.	% of Total Prod'n.	Consumption Tons.	% of Total Consp'n.
Czecho Slovakia	242,506	1.158	80,550	.384
Finland	310,399	1.482	86,142	.316
France	628,311	3.000	773,658	3.693
Germany	2,190,300	10.456	1,627,921	7.772
Italy	400,962	1.914	423,055	2.020
Japan	575,758	2.750	598,865	2.859
Norway	390,000	1.862	44,454	.212
Poland	130,777	.624	157,958	.754
Russia	305,337	1.457	401,898	1.919
Sweden	584,249	2.789	170,638	.815
United States	10,002,070	47.750	11,943,174	57.016
United Kingdom	1,649,760	7.875	2,025,367	9.669
Canada	2,468,691	11.785	570,153	2.722
New Foundland	202,852	.968	15,399	.073
All others	865,000	4.130	2,047,695	9.776
TOTAL	20,956,972	100	20,946,927	100

American Pulp and Paper Association.—It will be noticed that the United States and Canada between them produce and consume almost sixty per cent. of the total World Production and Consumption of Paper. Canada with a production of about two million tons greater than her consumption, makes up the two million ton deficiency between consumption and production in the United States.

The latter Country is by far the largest producer of paper as well as the largest consumer.

World's Distribution of Timber.

Canadian Bank of Commerce.—Statistics regarding supplies of pulp wood again emphasize the dominating influence of North America in the World's markets.

A very informative article was reprinted in the Pulp and Paper Magazine of 9th January, 1930, from the Monthly Commercial letter, Canadian Bank of Commerce (a copy of the magazine is sent herewith). The writer of this article described the geographical distribution of the World's forests as follows:—

	Per cent.
Asia	28
South America	28
North America	20
Europe	10
Africa	10
Other Areas (Balance)	4
TOTAL	100

The total stand of *soft wood* be estimated at one-third of the grand total and its distribution was given as follows:—

	Per cent.
North America	40
Asia	33
Europe	21
South America	4

Although Asia possesses a large share of the soft wood supplies it is pointed out that these are for the most part remote and inaccessible. Siberia, for example, has about one million square miles of coniferous area—an area fully one-tenth of the total forest area of the globe—but remote from markets, poorly served by transportation with the northern section broken by immense swamps. It will probably be the last to be developed and mainly constitutes a reserve for the perhaps distant future. Japan has a large pulp and paper industry and may eventually assist in the development of the Siberian forests as she already draws upon them for a small part of her pulp wood requirements but obviously such supplies must be expensive. (It may be noted that the latest information about Japan is that she is now looking to Canada for supplies.)

In Europe the largest forest areas are in Russia which possesses about 600,000 square miles of coniferous forest. Here again the question of accessibility comes in.

Other areas are as follows:—

	Sq. miles (coniferous).
Sweden	80,000
Finland	70,000
Norway	26,000

In each of these, except in Sweden, the annual "cut" exceeds the annual increment.

America's Pulp Wood Resources.

Official Publications.—The foregoing figures, justify our opening statement about the dominating position held by America in the World's Pulp & Paper Industry. The next point is to examine the information relating to America's pulp wood and wood pulp resources.

The latest official statistics and most authoritative information are contained in the books and pamphlets mentioned at the Tariff Board enquiry on 2nd August 1931 and left with the Secretary. These are:—

- (1) Report of the Canadian Royal Commission on Pulp wood, July, 1924.
- (2) Report on United States Senate Resolution No. 511, June 1st, 1921.
- (3) Bulletins of the United States, Department of Agriculture Nos. 886 of 1922, 1241 of 1924 and Statistics Bulletin No. 21.

United States.

Taking the United States statistics first it will be seen from Bulletin No. 886 that the drain upon the country's forests is *no less than four times as much as the annual growth*. Although President Hoover last year instituted a Forest Conservation Board this, so far, represents merely a gesture and "re-afforestation" and forest conservation remain practically where they were when Statistics Bulletin No. 21 pointed out that "new tree growth is largely volunteer" and that about half the forest area of the United States *does not produce any net growth* "either because it is virgin forest where growth is off-set by decay or because it is so denuded by over-cutting and fire as to be unproductive."

Dealing with question of the World's supplies, Bulletin No. 1241 of 1924 reports as follows:—

"A recent study of the world's timber supply shows that coniferous species supply nearly half of the timber cut in the entire world, but that they occupy only a little more than one-third of the world's area of forest land. Furthermore, the current growth of conifers is less than four-fifths of the cut. The critical world's timber supply problem of the next half century at least will center in the coniferous forests." After referring to the enormous expansion of the demand for paper the Bulletin goes on to say:—"Along with this rapidly expanding world demand must be taken into account the limited amounts which other countries can supply. Sweden is already removing the full annual growth from her forests and Norway is over-cutting hers. The Finnish Forests as a whole are being over-cut. Many observers foresee the limit of the expansion of the eastern Canadian industry. Apparently the only country in the world outside of the United States which offers the opportunity for a long sustained increase in pulp-wood supplies commensurating with the increasing world demands is Russia, including Siberia, and a large part of the Russian forests are inaccessible." It then suggests that the import of paper or pulp from foreign sources is "a sound measure of forest conservation. They will eke out our diminishing supply of convertible pulp-wood. But looking forward to the coming worldwide shortage of these materials, with its reactions upon cost and upon the policies of foreign nations, the only sure way to supply our future paper requirements

abundantly and cheaply is to utilise our own natural advantages for producing them on American soil."

Canada.

Royal Commission.—According to the report of the Royal Commission on Pulp-wood, the annual consumption of the principal pulp-wood species (spruce and Balsam) very substantially exceeds the annual growth. This statement is specifically made without taking account of the fire losses which are "conservatively estimated" (according to the report) at 800,000,000 cubic feet annually and upwards of a million acres of young growth. Nor does it take account of the average loss of 1,345,000,000 cubic feet per annum due to the spruce budworm to say nothing of loss from other causes. The Royal Commission said "for Canada as a whole it may be forcibly stated that the continuance of forest production on the present scale to say nothing of increasing the output is absolutely contingent upon very material reduction in the amount of losses annually suffered from fires, insects and decay."

According to Part III, section B (1) of this Report these losses "*in almost every case except British Columbia off-set, or more than off-set, the increase due to growth.*" In the Maritime Provinces the "annual utilization of pulp-wood by industries already established exceeds by a wide margin the annual increment in those species. In Ontario and Quebec on the other hand *aside from losses* annual growth of pulp-woods may be approximately in a state of balance with annual use—although it is open to serious question that the condition is even that satisfactory—but in these provinces all losses due to fire, etc., operate in *net depletion* of the forest resources".

The following figures show the estimated total stand of Spruce and Balsam, the annual increment and annual consumption in each province of the Dominion taken from the report in question, viz:—

Province.	Accessible and merchantable stand of Spruce and Balsam in Millions of Cords.	Annual increment in Cords (1 % of stand).	Annual con- sumption in Cords (in 1923-1924).
Nova Scotia	25	250,000	400,000
New Brunswick	33	330,000	1,100,000
Quebec	279	2,790,000	2,900,000
Ontario	127.5	1,275,000	1,200,000
Manitoba (no pulp mills)	9.5	95,000	230,000
Saskatchewan (no pulp mills)	13.6	136,000	220,000
Alberta (no pulp mills)	26	260,000	150,000
British Columbia (Spruce, Hemlock and Balsam)	125	1,250,000	639,500
TOTAL	638.6	6,386,000	6,839,500

These figures of accessible pulp-wood and of annual increment were described by the Royal Commission as calculated on generous lines. They said that "in some of the intensively managed forest areas of older countries, which have been under regulation for scores of years, rates of increment approximating 2½ to 3 per cent. may be attained; even so, such rates cannot be applied to their forest areas as a whole". They added that even figures of 1.25 to 1.5 per cent. are only attained when the general average is raised by results of highly managed forests. The figure adopted as representing the annual increment in Nova Scotia (where the climate is

extremely favourable to regeneration of spruce) was 1 per cent. Although they expressed doubt whether this figure could be attained in other provinces they nevertheless accepted and used it as a basis for their survey of the resources of the Dominion as a whole with the results tabulated above.

As a matter of interest it may be mentioned here that the commission accepted the view that a fair average rate of growth for "second growth" trees in a forest was *one inch diameter in seven years* or say 85 years for a 12 inch tree. Trees planted out in old pastures they said took 60 years to reach this diameter. Regeneration of pulp-wood is thus not a speedy business and re-afforestation is not an instantaneous cure for excessive depletion.

Before passing from the subject of the Royal Commission and its Report it is of interest to note that one of the objects of the appointment of the Commission was to ascertain if it was necessary or desirable to impose an embargo upon the export of pulp-wood to the United States of America. The Commission did not attempt to answer this question as they said it was one of policy to be decided by the Government. The United States constitute Canada's best customer for paper, taking 94 per cent. of her output and the whole of her exports of pulp and pulp-wood and the question of an embargo upon pulp-wood export is a delicate matter upon which opinions are much divided. The proposal for an embargo was again mooted in the Canadian House of Commons early in 1930. It is a matter that can only be decided upon by the Federal authorities who are unwilling to adopt measures which may provoke retaliation from the United States. The provincial Governments however are taking measures for their own protection by passing legislation which will enable them to restrict the "cut" of timber. The provincial Governments can also hamper the freedom of loggers (and consequently the export of pulp-wood) by strict insistence upon measures for the prevention of waste. "Thus it has been said" (says the New York Paper Trade Journal of 13th February, 1930) "that for every log cut as many as thirty young trees are destroyed in clearing operations and in cutting roads. Should the Government intervene to cut this waste to an absolute minimum *the cost of getting pulp-wood to the mills would be substantially increased*" (Italics ours).

Facts to be remembered in considering the relationship of Canada to the United States in connection with this matter of pulp and paper are that, Canada's Paper industry has been built up with the assistance of United States capital, and that it concentrates mainly upon the supply of News-printing, its best customers being the American Newspapers whose interests largely dominate the situation because of their power of influencing public opinion on both sides of the border.

There is moreover a definite tendency on the American side of the border to view Canada's available supplies of timber through a magnifying glass and to make loud complaint against any measures she may contemplate for the protection of her resources. Nevertheless the United States interests concerned are not entirely blind to the situation *vide* the article by Mr. G. G. Wheat printed in the "Editor and Publisher" (New York) of 21st December, 1929 (reprinted in the Canadian Pulp and Paper Magazine of 2nd January, 1930). (A copy of which is submitted herewith). In this article Mr. G. G. Wheat stated that the total stand of timber in North America was as follows:—

	c. ft.
United States as per Bulletin No. 21	745,558,000,000
Canada	246,826,332,000

He calculated that use and loss would wipe out the former in 15 years and the latter in 49 years after allowing for increment, use and all losses, but not for any increased consumption of forest products.

Proceedings of Imperial Conference (herewith)—Mr. Frank Barnjum, a Canadian delegate to the recent Imperial Conference, (1930) told the Forestry Committee of the conference that according to Forest Service estimates only

27 per cent. of Canada's original stand of conifers now remains and that a halt in the utilization would become obligatory in about six years when a serious shortage would develop.

Another delegate *Dr. H. M. Tory* regarded the situation less unfavourably but he mentioned that much of the standing timber is at present inaccessible as stated by the Royal Commission which said that large tracts of pulp-wood were inaccessible and not to be taken into calculations of supplies economically available.

Mr. Barnjum may be described as a male Cassandra regarding Canada's Forest Resources as he is a constant prophet of disaster. (Let us not forget that Cassandra proved a true prophetess). In this he is stoutly supported by a certain *Dr. Emil Schenk* whose remarks on the Canadian position and on the world situation generally may be cited. These were published in "The Papermaker & British Trade Journal" of 1st November, 1930, *vide* annexed extract.

A paper upon the Timber supply of the world by *Dr. Felix Mandl*—was published in the *World's Paper Trade Review* of 30th August 1929 and a copy of the article is annexed.

This states the world's total annual consumption as 1,600 million cubic metres of round wood against the estimated total annual growth amounting to 1,100 million cubic metres. The figures are not supported by many detailed particulars, but the article gives a very succinct account from the standpoint of its author.

Dr. Charles W. Boyce, Secretary of the Pulp-wood section of the American Pulp & Paper Association has recently published a note designed to illustrate the trends of production and trade in wood-pulp. The American Trade Commissioner in Calcutta received a copy from America a couple of weeks ago and kindly brought this to our notice. It is full of interesting statistics.

Its general conclusions are that a sheer famine in wood-pulp is not to be anticipated and that the United States by organization of resources and technical skill in their utilization can probably become self supporting. The writer refers to the shift over to the sulphate process for certain paper requirements and suggests that this is likely to widen the range of available raw material. It is interesting to note his remarks as follows:—

"As the competition of the future centres largely in material costs, there are possibilities of a large aggregate competition from grasses, straw, bamboo and many other fibres. Bamboo particularly has both economic and technical possibilities that might, it is conceivable, substantially change the character of the world industry. It should not be overlooked."

According to his figures the world's production of pulp from wood amounts to nearly 19 million tons (18,924,000). The following statement is given by him to show the contribution of each country:—

Country	1913.	1920.	1929.	Probable 1942.
World	100·0	100·0	100·0	100·0
Austria	2·4	1·0	1·8	1·5
Canada	9·5	19·2	21·2	20·4
Czechoslovakia . .	1·4	1·4	1·7	1·5
Finland	3·7	3·5	5·6	9·2
Germany	18·6	9·1	11·6	10·0
Japan	·9	2·9	3·7	5·0
Norway	7·1	6·6	5·5	4·3
Sweden	14·6	14·0	14·5	15·2
United States . .	32·3	37·5	25·7	23·3
Other Countries . .	9·5	4·8	8·7	9·6

It would be interesting to attempt an estimate of what the above quantity of pulp represents in timber. Dr. Boyce tells us that about 8 million tons of the total consists of mechanical pulp the remainder (11 million tons) being chemical pulp. Now allowing that it takes in the mill 1.1 tons of timber to make one ton of mechanical pulp and $2\frac{1}{2}$ tons to make one ton of chemical pulp then on his figures the total timber consumption in the mill would be—

Tons.					
8 million	$\times 1.1 =$	nearly	.	.	9 million.
11 "	$\times 2.5 =$	"	.	.	$27\frac{1}{2}$ "
		Total	.	$36\frac{1}{2}$	million.

This is the figure which represents actual timber consumption in the mill. To put the figure on a forest basis would need a substantial addition probably not less than 10 per cent., but let us take the total at say 40 million tons per annum.

The manufacture of paper is not the only purpose served by wood-pulp but if we estimate the demand of the next fifteen years on the basis of the increased production of paper during the last fifteen years we must expect to see the figure rise from 40 million tons to-day to 65 million tons in 1945. Raitt puts the figure at 90 million for the year 1950 and if we consider the *per capita* consumption of paper in America and compare it with the *per capita* consumption of the rest of the world we are faced with a vista of somewhat alarming possibilities. According to statistics quoted in Mr. G. G. Wheat's article the *per capita* consumption of paper in the United States of America reaches the amazing figure of 206 lbs. He does not give figures for other countries but from other statistics we know that the *per capita* consumption in Great Britain is less than 100 lbs. The average for the rest of Europe is less than half of the British figure while there are vast fields for the expansion of demand in South America and other Continents.

Europe and Asia.—We are not in possession of authoritative official statistics as to the stands of timber in Europe and Asia, but a good deal is said about them in the American Reports quoted and mentioned in the foregoing. Russia at present is the dark horse. She is building pulp and paper mills in accordance with the five year plan and meantime is liquidating her capital resources in timber in order to establish foreign credits, but all opinion seems to point to the fact that this is merely a temporary phase.

Conclusion.

Very conflicting views—coloured by self-interest perhaps—are voiced on both sides of the question of a probable famine in pulp. It would be difficult to draw final conclusions but there is one thing upon which we may agree, *viz.*, that with bamboo actually now in the field as a raw material the paper-maker may be of good heart. Pulp-wood and wood-pulp may become scarce and expensive but Bamboo is abundant and cheap besides possessing the virtue of rapid regeneration.

A. R. BARBOUR.

7th August, 1931.

Extract from the World's Paper Trade Review, August 30th, 1929.

According to a very interesting paper in *Deutschenvolkswirt* by Dr. Felix Mandl, of London, the annual consumption of wood in the world is about 1,600 million cubic metres of round wood. The total annual growth is estimated at 1,100 million cubic metres. It thus appears that about 500 million cubic metres more wood is used than grows.

The growth of coniferous wood covers about 75 per cent. and that of hard woods about 50 per cent. of the consumption. Europe with only 10 per cent. of forest area of the world supplies about 600 million cubic metres and this

accounted for by the fact that Europe is the only continent whose forest areas are rationally managed and protected.

The annual growth in the great primeval tropical forests of South America and Africa and in the untouched soft wood forests of Siberia cannot be estimated. While in Europe, in consequence of orderly forest management, the consumption is roughly equal to the annual growth. The United States of America consumes 680 million cubic metres while the annual growth is only 120 cubic metres. Obviously if the United States of America continues to use up its forests at the same rate, in about 40 years the last acre will have been felled.

The only state which still possesses reserves of soft woods is Russia. If European Russia were to fell the whole of the annual growth she could export about 60 million cubic metres more than she now does, and if Siberia were to manage all her forests rationally she could export about 100 million cubic metres out of a total felling of about 300 million cubic meters, but at present she exports practically nothing.

According to these theoretical considerations Europe and Asiatic Russia could export about 160 millions cubic metres more annually. Taking everything into consideration the total consumption of timber in the most important timber using countries, viz., United States of America, Great Britain, Germany, France, Italy and Belgium, which together use two-thirds of the world's consumption, averages in the last three decades about $1\frac{1}{2}$ per cent. increase yearly, or the consumption doubles in about 50 years. If this development continues the annual requirement of timber on earth will be about 3,000 million cubic metres in 1970 and about 5,000 million cubic metres at the end of the century. At the same time the total annual world's growth, if in the meantime all the forests of Europe and Asiatic Russia have been put under modern economic management, will in the best event cover only about one-third of this demand, and the entire reserve of timber in Russia and Siberia could only supply twenty years requirement.

If one, merely for the sake of numerical comparison, supposes that the primeval tropical forests yield as much useful wood per acre as the scientifically managed coniferous forests of Europe, nevertheless by the end of the century the total annual growth would be 30 or 40 per cent. less than the above estimated consumption.

Just as in the course of the last 200 years the great forests of Central Europe and England have been converted into agricultural land so, in the United States of America in the course of a few decades the once very great forest wealth will be reduced to a small residuum, and with continued increase in population and continued economic development within one century the forests of the world will have entered into decline.

How can the increasing use of timber be opposed? Only through two means can this increase be curtailed, first, by some better means of working wood than we have to-day, so that the average life of goods made of wood may be prolonged, and second, by substituting other raw materials for wood.

DR. EMIL SCHENK.

Extract from "The Papermaker and British Trade Journal" of 1st November, 1930.

I recently saw a carefully considered and startling summary of the world's spruce wood supply, prepared by Dr. Schenk, an authority and a very well-informed forester. During the course of his conclusions Dr. Schenk states:—

"There is one very important industry; in fact, Canada's most important manufacturing industry, which actually faces death when the woods are despoiled, and that is the paper industry. The best tree for the manufacture of paper is the spruce tree, of which there are in Canada six species. Canada

has been, and is to-day, the real home of the spruce. No country on earth could boast of a larger area stocked with spruce than could Canada. Alas! Canada is losing its lead, and will lose it for ever if the devastation and reckless exploitation now going on is permitted to continue unchecked. There is sure to be a world famine in spruce wood. There is no substitute comparable with this rapidly disappearing wood for the manufacture of paper and rayon silk, as no other raw material is so uniform or so cheaply handled as spruce, and none is so close to good water and to water power, both essential to paper-making. The world is short of spruce. The best paper mills in England, Germany, France and Holland get their supplies to-day from Finland and from European Russia. Finland, however, is a small patch on the map, and what spruce there is in European Russia is inaccessible unless it be situated in close proximity to floatable streams such as the Dvina and the Pechora. The area capable of producing spruce in that section is about as large as the province of Ontario (360,000 square miles). It is badly exhausted, and were it not exhausted, it is unable to supply the needs of Europe. Siberia has been described by some travellers as a real ocean of spruce (*Picea obovata* Ledab). The Soviet Republics have started, however, specific investigations, with the result that spruce in Siberia, while it happens to occur scatteringly and sparingly, cannot be exploited for technical reasons. The rivers draining Siberia are frozen when the harbours at their mouth are free of ice, and the harbours are covered with ice when driving on the rivers is possible."

After making references to the various species of spruce to be found in the extreme East, Dr. Schenk goes on to state: "It might well be asserted that the spruce woods of Asia, as far as the world's supply is concerned, might just as well be situated on the moon. It is impossible, whatever the developments of transportation might be, to bring these spruce supplies to the markets of America and of Europe. As for the United States, spruce is practically gone, and without the help of Canada the newspapers of the United States are lost. Canada is, he concludes, in the face of these facts, in an unusual position. She has in the spruce game all the trumps in her hand. Alas! She is playing a poor game. She is wasting her trump cards, and she must lose the game in the end, unless the newly-elected incoming Government takes immediate steps to conserve her small remaining supply through every means in its power."

Enclosure No. 9.

Average freight paid by our Mills in 1930-31 for that portion of our output which was delivered to up-country stations was Rs. 28-4-4 per ton. Details are as follows:—

Station.	Tons.	Rate per ton.			Total.		
		Rs.	As.	P.	Rs.	As.	P.
Delhi . . .	853	20	14	9	17,846	5	9
Mofussil . . .	2531*	32	9	0	82,415	11	0
Madras . . .	1573 }	29	7	0	63,025	11	0
Madras Govt. . .	568 }						
Bombay . . .	1270	34	4	3	43,517	5	6
Lahore . . .	1568	34	15	7	54,839	2	8
Bishambarnath							
Niranjanlal . . .	838	15	1	8	12,657	4	8
Lucknow . . .	180	15	1	8	2,718	12	0
Govt. Mofussil . . .	1305	19	3	6	25,080	7	6
	10,686	...			3,02,100	12	1
					= Rs. 28-4-4 per ton.		

* This covers many miscellaneous stations and an average freight has been struck for the purpose of this item

Enclosure No. 10.

Increased rates due to introduction of terminal charges by Eastern Bengal Railway and increased rates by East Indian Railway with effect from 1st September 1931 (vide East Indian Railway Supplement to Foreign Rate Circular No. 3 of 1931, dated 30th June, 1931).

To Station.	Wagon Load		Difference in rate.	
	Old rate per md.	New rate per md.	Per md.	Per ton.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Allahabad . .	0 6 11.42	0 9 0.42	0 2 1	3 8 9
Cawnpore . .	0 8 5.42	0 10 5.42	0 2 0	3 6 6
Delhi . . .	0 11 10.42	0 13 7.42	0 1 9	2 15 8
Lahore . . .	1 4 1.42	1 5 5.42	0 1 4	2 4 4

To Station.	Smalls.		Difference in rate.	
	Old rate per md.	New rate per md.	Per md.	Per ton.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Allahabad . .	0 8 2.42	0 10 8.42	0 2 6	4 4 2
Cawnpore . .	0 9 11.42	0 12 4.42	0 2 5	4 1 10
Delhi . . .	0 14 0.42	1 0 2.42	0 2 2	3 11 1
Lahore . . .	1 6 8.42	1 8 4.42	0 1 8	2 13 5

For the purpose of arriving at the average increase in freight, we have selected the following markets and show our calculations as follows:--

Station.	Tons.		Rate per ton.	Total	
				Rs. A. P.	Rs. A. P.
Delhi . . .	853	Wagon load . .	2 15 8	2,541	3 8
Lahore . . .	1,568	75% „ 1176 tons.	2 4 4	2,670	8 0
		25% smalls. 392 „	2 13 5	1,112	11 4
Allahabad . .	223	50% wagon load 111½ „	3 8 9	395	7 7
		50% smalls 111½ „	4 4 2	475	0 7
Cawnpore . .	213	smalls . . .	4 1 10	876	6 6
	2,857			8,071	5 8

Average of excess freight per ton=Rs. 2-13-2.

Assuming other Railways increase rates similarly to East Indian Railway and on the basis of the above average increase, the total additional expenditure on account of freight that would be involved to the Mills would be:—

10,686 tons × Rs. 2-13-2=Rs. 30,165-11-0.

The freight of 10,686 tons represents our total up-country despatches for 1930-31.

Enclosure No. 11

Note shewing shares held by Managing Agents.

With reference to the request made by the Tariff Board that a statement be submitted showing what percentage of the Capital of the Company was held by the Managing Agents, the following statement has been prepared. It includes the value of shares of each class registered in the name of the Managing Agents and the partners:—

Class of Shares.	Value of holding. Rs.	Percentage of Total.
Ordinary Shares	50,275	11.5
Preference (Old Issue)	1,000	0.3
Preference (New Issue)	5,000	0.6
Deferred	1,93,270	60.8
Percentage of total Capital held by Managing Agents—13.1.		

(10) *Letter dated the 11th August, 1931, from the Titaghur Paper Mills Co., Limited.*

As desired by you, we have the honour to give the following information with regard to our imports of protected kinds of paper during 1928-29. At the same time, we venture to make one or two further submissions which we hope will be considered relevant to the Enquiry in general.

One of the first results of Protection was to cause a better flow of orders to the Indian Mills, and, in our case, because of intensified efforts to develop a strong demand for our paper, we found that by the year 1928 we were booking more tonnage than our Mills could manufacture. It was not our policy to turn this surplus tonnage away, but rather to meet demand and satisfy our customers, especially as we were looking to the future and expecting that on the completion of our renovations, then in hand, we should require the extra tonnage in order to keep our Mills fully employed. We therefore decided, as a temporary measure, to supply the gap by importing paper to the requisite extent. In all, we imported the following quantities of protected kinds.

	Tons.
White Printing	461
Cream Laid	36
Banks	115

This paper was made to our sample and was of a similar quality to our own papers which were being made at our Mills at that time. It was packed under our own labels, as per specimens enclosed, but as the paper was not manufactured in this country, we purposely omitted any remarks on the label which would create an impression with the dealer or consumer that the paper was made in India. Our labels represent a standard of quality, and our paper sells because of that standard and because it is good value at the price which we ask. It might be mentioned that we have never been able to obtain any preference for our papers on the part of the Bazaar dealers merely on the ground that it is produced locally. Even during the last twelve months, while the "Swadeshi" movement has been so strong, there has been a very large section of buyers who prefer imported paper because of a belief that it must be better than the local make. We may also mention here that it is common practice with dealers who have their own established brands of paper to use the same labels for both imported and locally made paper of the same

kind. We could give you definite instances of this and names of dealers, if necessary. It is the custom in the Bazaar to sell paper by brands, and the brand is very often no criterion of the country of origin; in fact, we know it is the practice of some dealers when ordering paper under their own brands from us to sell the paper as foreign make in order to secure a higher price.

As regards the prices at which we bought these imported lots, we cannot give you details for each separate shipment, but our accounts show that average landed costs were as follows:—

	Per lb.
	As. P.
White Printing, I. F.	3 7
White Printing, M. F. Demy, 12 lbs.	3 11
White Printing heavy substance	3 6½
Cream Laid, 8 lbs.	3 11
Cream Laid, 10 lbs.	3 9
White Bank	4 2
Tinted Bank	4 3½

We, of course, paid the full Protective Duties on all these imports.

The prices at which we sold the papers were the same as the prices of our own mill made papers. They varied according to the customer and the market. We quote, however, our Calcutta prices for these qualities which were ruling at the time, as the greater proportion of the tonnage imported was sold at Calcutta, and they will therefore serve as the best guide.

	Per lb.
	As. P.
White Printing, I. F.	3 9½
White Printing, M. F. Demy, 12 lbs.	3 8½
White Printing heavy substance	3 7½
Cream Laid, 8 lbs.	3 8½
Cream Laid, 10 lbs.	3 7½
White Bank	4 4
Tinted Bank	4 5

These imported papers were sold at Calcutta, Bombay and Madras. Our last order for these imported qualities was sent Home in the early part of 1929.

As already stated, our object in importing these papers was to enable us to satisfy our customers and retain a hold upon the market we had developed, and we consider that results and the subsequent increased production at our Mills fully justified the policy. So far as we are aware, a similar position did not arise with any of the other Mills—a fact which may perhaps be attributable to the excellence of our selling organisation which is continuously in close touch with market requirements and was able to distribute the imported paper to the satisfaction of the buyers.

It has been stated that we sold our imported papers at a loss. Whether the point is relevant or not—we do not think it is when our object of these imports is considered—our trading accounts for imported paper have shown a profit and not a loss.

Manilla Paper.—We were present during your public examination of the Controller of Printing & Stationery on Saturday last, and, considering the importance you appeared to attach to the Controller's consumption of Manilla paper, we think we should acquaint you of a very important order for Manilla paper which is placed by another Government Department, viz., the Master,

Government of India Security Printing, Nasik. This Department places orders annually for Manilla postcard paper to an extent of no less than 1,800 tons, and, in all probability, their order to-day reaches a figure nearer to 2,000 tons. This order has been lost to India mainly on account of price, and because Manilla is an unprotected item. We have, however, had small orders from Nasik for Postcard Boards amounting to, roughly, 300 tons a year. Manilla is a quality which can be and is made in our Mills, although the tonnage available has not been sufficient to enable us to develop manufacture to that extent which will permit of the most economical working, and we have been unable to increase the flow of tonnage to our Mills owing to the fact that this paper can come in so cheaply under the Non-protective Tariff. We have been given to understand that the Master, Security Printing, is anxious to develop sources of supply for these postcards in this country, as, in view of the importance of his work, viz., postal requirements, he wishes to be independent of outside supplies for his paper etc. He is, however, obliged to buy in the cheapest market, hence Indian Mills have little chance of securing any of this tonnage at present. We may mention, however, that most of this Officer's requirements of Postcard Manilla is in reels, and specially with the object of being in a position ultimately of securing a large share of his order, we are actually at this moment installing a new reeling machine recently imported from abroad purposely designed for making satisfactory reels of heavy substance papers like postcards. We are also at the moment modifying one of our paper machines at Kankinara so as to enable us to give a water finish to this postcard paper, thereby avoiding the cost of super-calendering, and so reducing our cost. We are afraid, however, that other modifications to plant will be necessary before we can get down to the most economical working required to meet competition from abroad, and because of this we hope that our request that all Manilla papers should be brought within the Protective Tariff be seriously considered.

We think there is no question as to the fact that a satisfactory Manilla paper can be, and is being, made in this country at present. It only remains for production to be developed to such an extent that costs will be brought down to an economical level for Indian Mills to be able to compete with the imported article.

Newsprint.—It was stated by a representative of the Paper Dealers when giving evidence before you on the 6th instant that there was no intermediate field of cheap Printings. We disagree with this statement. Our experience is that certain papers used to come to this country containing not 20 per cent. but from 40/50 per cent. Mechanical. It is these papers which have disappeared from the market, because of the difference between the Revenue and the Protective rates of duty. Dealers have found that by the addition of another 15 per cent. or so of Mechanical the quality of the paper is not seriously affected and they can import the paper at Revenue rates of duty and so undersell the local Mills, especially as the loading is not now taken into consideration in the analysis. Loading not only has the effect of cheapening a furnish, but in cheap papers of this sort it has, within limits, the effect of improving the colour and the surface of the paper.

We are able to support all we have said on this subject with a variety of samples of paper, which we have collected together with the Manufacturers' evidence as to the Mechanical Wood contents. Some of them are very fine papers indeed, and by no stretch of the imagination can be classed as Newsprint, as they are made from bleached pulps.

We take this opportunity to enclose ten more letters from local Newspapers, supporting our contention that a paper containing 75 per cent. Mechanical is quite satisfactory for ordinary Newspaper purposes.

Bamboo Paper.—The Board has been desirous of obtaining the opinion of consumers on the suitability of paper made largely from a furnish of Bamboo. We would therefore like to supplement our reply to question No. 35 with some opinions taken from our files and expressed by our customers.

1. Letter dated May 7th, 1931, from the Caledonian Printing Co., Ltd. Calcutta:—

“In reply to your letter of the 5th instant, we have to state the Imitation Art supplied for “Capital” Supplement was, considering the price, very satisfactory. We are unable to compare it price for price with an imported paper but at the moderate rate it should find an increasing demand.

We are interested to learn that this paper contains a large proportion of bamboo pulp, which, judging by this supply, seems to be quite a satisfactory constituent”.

2. Letter dated 16th May, 1931, from Messrs. G. Claridge & Company, Limited, Bombay:—

“In reply to your letter T. P. M. 3-31/183 of the 5th instant we write to say that we consider your Ivory Finish Paper to be quite as good, price for price, as any paper of this description we have hitherto imported.

The Cream Laid Paper does not compare so well with that imported from abroad. The colour and texture needs a little improving, but as this paper is made from bamboo by a new process, without doubt the Mills will in a very short time be able to give the paper these slight improvements.

May we congratulate you on the success you have obtained with the new process, particularly with regard to Ivory Finish Paper”.

3. Letter dated 12th May 1931:—

“We thank you for your letter of recent date, and beg to advise that we have found your paper satisfactory in every way, we do not wish you to use our name should you choose to publish the information as a testimonial. The quality of paper submitted has given us every satisfaction”.

These are first class Printers and Publishers and their opinion will, no doubt, carry some weight with the Tariff Board. In the case of No. 3, we have not given the name of the customer, but it is available to the Members of the Board if they wish it.

(11) *Letter dated the 12th August, 1931, from the Titaghur Paper Mills Company, Limited.*

We have the honour to ask permission to lay before the Board certain figures and comments which have an important bearing upon a prominent feature of the comparative Cost statements furnished by us in reply to the Board's original and supplementary questionnaires and in response to subsequent enquiries.

2. We refer to the fact that the cost of Power and Fuel is shewn in these statements at figures which in 1930-31 are considerably below corresponding figures for 1924-25. We wish to make it clear that the total reduction—although greatly assisted by the use of cheaper coal (as mentioned in our printed Evidence, page 36) and benefitting from the general fall in the price of coal—is not entirely due to these causes.

3. To a certain extent the reduction reflects improved efficiency.

4. On page 36 of our printed Evidence we stated that the cost of power and fuel fell from Rs. 47.432 per ton of paper to Rs. 20.577 per ton in 1929-30. From Form II it will be observed that in 1930-31 (due to the use of slightly dearer coal) the figure was Rs. 21.996 per ton of paper showing a saving of Rs. 25.436 per ton of paper as compared with 1924-25. The figures for power and fuel in Forms I and III show the expenditure on coal for pulp and paper making, etc., but do not include the cost of coal used in the manufacture of Bleach and Caustic. The latter expenditure is included in the figures in these forms shewing the “Conversion Charges for Manufacture of Bleach and Caustic”.

5. For a full examination of costs in relation to coal we therefore take the figures of total coal consumption in each of the two years under com-

parison. We set these out hereunder together with figures of paper production shewn in relation to coal consumption and cost as follows:—

Total Coal Consumption (both Mills).

	Quantity.	Amount.	Cost per ton of coal.
	Tons.	Rs.	Rs.
1924-25 . . .	85,517	8,33,746	9.749
1930-31 . . .	80,222	4,90,155	6.110
Difference . . .	5,295	3,43,591	3.639

Paper Production in relation to Expenditure on Coal.

	Paper Tons.	Total tons.	Tons per ton of paper.	Rupees.	Rupees per ton of paper.
1924-25 . . .	15,555	85,517	5.498	8,33,746	53.6
1930-31 . . .	19,260	80,222	4.165	4,90,155	25.45
Difference . . .	3,705	5,295	1.333	3,43,591	28.15

6. The actual total saving in 1930-31 as compared with 1924-25 is here shewn as Rs. 28.15 and not Rs. 25.436 as stated in paragraph 4 above. The reason for this is of course that we are now including in our figures the coal used for making bleach and caustic.

7. Proceeding now to examine the savings in 1930-31 in the order in which they appear in the above tabulation we find:—

- Rs.
- (1) We have used 5,295 tons less coal in 1930-31, therefore our total expenditure is reduced by $5,295 \times 9.749$. . . 51,621
- (2) The coal we used in 1930-31 (80,222 tons) cost us Rs. 3.639 per ton less, therefore we saved in this way Rs. 2,91,928 or say . . . 2,91,970
- (NOTE.—Our total saving to this point is Rs. 3,43,591.)

- (3) The coal we used in 1930-31 gave us more paper than in 1924-25, therefore we are not only entitled to take full credit for the whole saving under (1) and (2) above (Rs. 3,43,591) but also to claim further credit for what we may call the "coal value" of the extra paper tonnage. Had we made less paper it would have been necessary to make a corresponding allowance in the coal figures before calculating our savings. Had we made exactly the same quantity in 1930-31 then we could have said that while cheaper coal had saved us Rs. 2,91,970 better efficiency had saved Rs. 51,621. These points are obvious but their statement helps to define the situation. The position may be expressed by the statement that in 1930-31 we obtained the full paper output of 1924-25 (15,555 tons) for an expenditure on coal amounting to Rs. 4,90,155 and, over and above this, obtained a further quantity of 3,705 tons paper *free of cost for coal*. In 1924-25 this extra paper would have cost extra for coal as follows:—

$$3,705 \text{ tons} \times \text{Rs. } 53.6 = \text{Rs. } 1,98,588$$

But in 1930-31 it cost us *nothing extra for coal*, therefore the saving here is Rs. 1,98,588. About 37 per cent. of this saving

(or say roughly Rs. 74,000) is attributable to the reduction in price (37 per cent. since 1924-25) but the balance Rs. 1,24,538 appears definitely attributable to improved efficiency.

8. Before examining more closely the question of improved efficiency we may now summarize the calculated savings as follows:—

	Rs.
Under (1) (paragraph 7)	51,621
(2) (paragraph 7)	2,91,970
(3) (paragraph 7)	1,98,588
Total saving	<u>5,42,179</u>

On 19,260 tons of paper this represents Rs. 28·15 per ton and works out exactly in conformity with the cost per ton of paper shown in paragraphs 5 and 6.

9. The nature of the materials used in the manufacture of paper naturally affects coal cost, and if increased wood pulp is used the coal required should be less. Hence we tabulate the following comparative analysis of the paper production for the two years, taking our figure from Form III of the printed Evidence as follows:—

Paper Production.

Material.	1924-25.	1930-31.	Increase or Decrease.	
	Tons.	Tons.	Tons.	Per cent.
Wood pulp	5,716	8,522	+2,806	+49
Indigenous Fibre	7,895	9,010	+1,115	+14
Clay	1,944	1,728	-216	-11
Total	<u>15,555</u>	<u>19,260</u>	<u>3,705</u>	<u>23·6</u>

These figures show that while the paper made from indigenous fibres has increased, the amount of paper made from wood pulp has increased in greater proportion, while that of paper from clay has fallen. In making up a strict account of the effect of altered "furnish" upon coal consumption we might be entitled to treat the first and the last mentioned points as together constituting a partial set-off against the increased use of wood pulp; but for our present purposes we can ignore the effects of any such contra allowances and deal only with the question of the increased wood pulp.

10. The extra quantity of paper obtained from wood pulp was 2,806 tons in 1930-31. This corresponds to 3,301 tons of pulp. (*Vide* Form III which shows 10,026 tons pulp in 1930-31 as against 6,725 tons in 1924-25.) In Enclosure No. 5 to our letter No. 209 C./31-15 of 8th August we show that the coal consumption per ton of grass pulp made in 1930-31 was 1·830 tons. Hence if we had had to make 3,301 tons extra of grass pulp instead of the wood pulp actually used the extra cost for coal in 1930-31 would have been:—

$$3,301 \text{ Tons} \times 1·830 \text{ Tons} \times \text{Rs. } 6·11 = \text{Rs. } 36,909$$

We are of opinion that this figure more than covers the allowance in the coal expenditure figures for the value of coal saved by the purchase of extra wood pulp in 1930-31.

11. A final analysis of our coal savings in 1930-31 would therefore be as follows:—

(a) Reductions due to cheaper coal and to the utilization of lower grades—

Para. 7 (2)	Rs. 2,91,970	
Para. 7 (3)	Rs. 74,000	
		<hr/> Rs. 3,65,970

(b) Reduction due to use of extra wood pulp . . . Rs. 36,909

(c) Reduction due to economy in the manufacture and use of steam and to increased production of paper—

Para. 7 (1)	Rs. 51,620	
Para. 7 (3)	Rs. 1,24,589	
		<hr/> Rs. 1,76,209
Less (b) above	Rs. 36,909	
		<hr/> Rs. 1,39,300

Total as per para. 8		<hr/> Rs. 5,42,179
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12. These figures show about 25 per cent. of the savings, or say Rs. 7 out of Rs. 28 attributable to better efficiency, but in submitting them we should like to emphasize the fact that we took special measures at both Mills to adapt our boiler plant to the successful burning of cheaper grades of coal (*vide* our answer to question 24 of the Questionnaire). Without these we could not have effected the large saving of Rs. 2,91,970 in the price of the coal burned in 1930-31. Some substantial share of the credit for this large saving is therefore surely attributable to improved efficiency.

Trusting the foregoing will prove of interest and use to the Board.

(12) *Letter dated the 12th August, 1931, from the Titaghur Paper Mills Company, Limited.*

In reply to your verbal request yesterday we have pleasure in submitting the following particulars for the information of the Board:—

Crushing Plant.—The Crushing plant at No. 2 Mill, Kankinara, can produce 24 tons of crushed and cut bamboo per day. As you are aware the Crusher is equipped with a Bertram's cutter which cuts the bamboo after it has been crushed. We have also two Boring chippers which, as stated on page 48 of our printed Evidence, can be employed as supplementary to or as a standbye to, a crushing plant.

Steaming time and pressure at No. 2 Mill.—The average steaming time is six hours and the pressure averages 53 lbs. gauge. It is however advisable to mention that ours being a closed cycle system there is very little need for live steam to maintain the required steam pressures. The principal requirement of live steam is at the stage where fresh caustic liquor is introduced. As in the counterflow system the liquor travels from the last cooking stage to the first, so also does steam pressure diminish in each stage so that once a pressure of say 80 lbs. is attained at the last stage there is no necessity for further live steam at any stage except to make up for radiation losses which are a small matter.

(13) *Letter dated the 13th August, 1931, from the Titaghur Paper Mills Company, Limited.*

As requested we have the honour to submit the following figures showing our average weighted works costs f.o.r. Mills for the past five years and our sales realizations over the same period:—

Works Costs in past five years.

Year.	Total Cost f.o.r. Mill. Rs.	Total saleable paper produced. Tons.	
1926-27	66,21,674	16,771	} (Figures all taken from Form I.)
1927-28	68,02,302	17,467	
1928-29	69,67,260	18,930	
1929-30	66,54,563	18,741	
1930-31	69,35,052	19,260	
	<hr/> 3,39,80,851	<hr/> 91,169	

Average cost per ton of saleable paper is therefore Rs. 372-724.

This figure does not cover Head Office and selling expenses including freight nor does it cover any allowance for financial charges or depreciation.

Net Sales values realised during past five years.

Year.	Total sales value f.o.r. Mill. Rs.	Tons paper sold. Tons.
1926-27	83,34,540	16,939
1927-28	84,86,576	17,733
1928-29	88,42,000	18,764
1929-30	85,04,318	18,452
1930-31	84,51,270	18,874
	<hr/> 4,26,18,704	<hr/> 90,762

Average Sales value per ton is therefore Rs. 469-565.

The above figures are the nett sales values realised after deducting freight and all selling charges. No management expenses or financial charges have been allowed for.

(14) *Letter dated the 20th August, 1931, from the Titaghur Paper Mills Company, Limited.*

We have the honour to acknowledge receipt of your letter No. 479/P.-47, of the 4th instant, and now enclose a statement showing, in the form desired, our production since 1923-24.

We have included the item of Manilla along with Printings as we have no separate analysis for this item and have been unable, therefore, to eliminate it. If you wish, however, to deduct our manufacture of Manillas from the Printing item, we think you may safely take the production at an average of 450 tons per year.

Enclosure.

Statement of Production of various groups of Papers in our Mills for the past seven years.

Year.	Printing.	Writing.	Badami.	Wrapping.	Total.
1924-25	9-510	3-172	1-445	1-383	15-510
1925-26	9-323	4-074	1-352	1-247	15-996
1926-27	9-385	5-270	1-415	1-010	17-080
1927-28	10-036	4-780	1-908	·887	17-611
1928-29	11-549	5-156	1-633	·611	18-949
1929-30	10-348	5-471	2-086	·836	18-741
1930-31	11-845	5-400	1-790	·210	19-245

NOTE.—The differences between these totals and those shown in our original Statement of Paper Production which accompanied our replies to your Questionnaire (page 78 of the printed copy) represent our Production of Blotting Papers.

(15) Letter dated the 21st August, 1931, from the Titaghur Paper Mills Company, Limited.

With reference to your letter No. 502/P-9 of 13th instant, we now return the record of oral evidence tendered by our representatives on the 2nd instant, with the necessary corrections.

With reference to the percentage figures of Caustic Soda consumption given on page 72 of the typescript, we would mention that the figures given in our written evidence read as 15-815 and 14-30 respectively, but when the President asked us to state the percentages on the basis of air dry weight of grass, a deduction of 10 per cent. was made from each. Hence in the oral evidence the figures appear as 14-23 and 12-87 respectively. We regret that this is incorrect because the grass weights upon which the percentage calculations are based are actual weights and not the calculated "bone dry" weights. It was therefore unnecessary to make a deduction of 10 per cent. This error, however, makes no difference to the sense of the evidence, nor does it affect the comparison made by the President.

(16) Letter dated the 21st August, 1931, from the Titaghur Paper Mills Company, Limited.

We have the honour to refer to that part of the oral examination on Sunday 2nd instant which was directed towards ascertaining if Mill working had improved in efficiency since 1924-25. It was suggested on the one hand that the reduction in works costs had been brought about mainly by the fall in prices of commodities and on the other hand that any improvement in the quality of the paper produced was due to the increased employment of wood pulp. We trust that our answers were satisfactory, but ask permission to supplement them in the following notes.

2. It is, of course, true that the Mills now obtain cheaper coal, cheaper grass and cheaper wood pulp, and that all such price reductions contribute towards a lower figure of works cost, but we think it would not be fair to the Mills to attribute the better results entirely to such causes. For example, it has been shown in our letter of 12th instant regarding coal consumption, that while economies have resulted from the fall in the price of coal, we have made further savings by adapting our plant to burn lower qualities and cheaper grades. Furthermore, we showed that over 25 per cent. of the total saving in the coal bill is the direct result of economies effected in the manufacture and use of steam and of increased production of paper. Figures have also been submitted on the 'yield' question showing steady improvement of the yield of all materials into paper.

3. Unfortunately, the two principal tests used in the examination to measure the efficiency of our working were those which, in our present circumstances, could not be expected to show very favourable results since they related solely to pulp manufacture. A comparison was drawn between the yield of grass into pulp in 1924-25 and that of 1930-31 and reference was made to the low figure of Soda Recovery in 1930-31 which, although 34 per cent. better than in 1924-25, still far below what it would be with a more adequate plant.

4. The reason why yield into pulp and soda recovery percentages are relatively low is simply that we have not yet been able to provide ourselves with digesting and recovery plant commensurate with our requirements, and until we can instal it we have to make the best of things as they are. The position could be remedied by immediate capital expenditure, but it has been considered wise to defer such meantime until we can decide as to the plant and process to be employed for bamboo and/or grass at No. 1 Mill. On page 57 of our printed Evidence, we stated as follows:—

“The replacements and extensions already completed form only part of a large and comprehensive scheme of complete mill renovation planned for both Mills.

“Proposals for No. 1 Mill include the construction and equipment of a new Digester House suitable for the production of pulp from Bamboo and Sabai Grass. The prosecution of this part of the scheme has been deferred pending results of Bamboo working at Kankinara and final decision as to the size and type of digester best suited to requirements.”

In answer to another question (*vide* page 15 of printed Evidence) we further stated:—

“It is impossible for any one to dogmatise on the question (of the most suitable size and type of digester) and we would not in the meantime hazard an opinion as to the most suitable digester for our process but hope that the new plant now on order will eventually prove helpful as a guide to the settlement of this problem as well as in bringing about an improvement in production and economy in manufacture.”

We have not in these quoted remarks alluded to the need for additional soda recovery plant, but this again hangs upon the question of the digester plant and process to be introduced for grass together with bamboo. With a process sending liquor in greater density to recovery it might not be necessary to undertake large additions. On the other hand, we have had our own expert in America studying some of the new “continuous” processes and the Wagner Furnace, and we may find it more desirable to take out the whole of the existing plant and substitute another. In the circumstances, therefore, we have not cared to incur fresh capital expenditure at this plant especially as we have found plenty to do in other directions with the funds available.

5. On the subject of pulp yield and soda recovery percentages we have one or two comments to offer, a consideration of which may lead the Board to look upon our figures for 1930-31 as possibly showing more favourably, than would at first sight appear, in comparison with the figures of 1924-25. In the first place, the comparative figures for grass all relate to No. 1 Mill, where we are still working with the identical grass digesters and soda recovery plant which was in use in 1924-25. The digesters at No. 1 Mill cooked 9,310·30 tons in 1924-25. They cooked 14,395·70 tons in 1930-31 showing an increased “throughput” of 5,085·40 tons or say 54·62 per cent. more than in 1924-25. The extra quantity of grass cooked called for the use of more caustic liquor and resulted in the production of greater quantities of black liquor to be treated in the recovery plant. That the increased quantity of grass has been treated without a great fall in the yield figures may be regarded as satisfactory—especially if, as we believe, the fall in yield is more apparent than real. The supplementary statements submitted with our letter of 8th August show the comparative yield figures for the

different materials into paper, and we respectfully suggest that this cannot be altogether disregarded in considering intermediate yields into pulp. That the increased supply of black liquor has been treated in the soda recovery plant concurrently with a 34 per cent. improvement in recovery figures is surely not unsatisfactory. The percentage in 1924-25 was 38 per cent., in 1930-31 it was 51 per cent., the difference representing 34 per cent. on 38. The consequence of the improved recovery was that in 1930-31 the net froth caustic used per ton of grass on a much larger quantity was about 6 per cent. lower than in 1924-25. It may here be mentioned as illustrating the handicap of inadequate plant—that in November 1930 when, owing to late deliveries, our grass supply was short the percentage of recovery rose to 64·97 per cent. In this month the grass cooked fell 33 per cent. below the average. In other words, during November 1930 we were digesting grass at the same rate as throughout 1924-25 and with the same recovery facilities we obtained a percentage recovery of 64·97 per cent. as against 38 per cent. in 1924-25.

6. With regard to the suggestion that the improvement in the quality of our paper is due to the increased use of wood pulp, we have already explained in our oral evidence that so far as No. 1 Mill is concerned the improvement there could not, by any stretch of imagination, be attributed to this cause. This is borne out by the following comparative figures showing the quantities of finished paper represented by the various materials used at No. 1 Mill in 1924-25 and 1930-31, *viz.* :—

Paper from	1924-25.		1930-31.		Gross Increase or Decrease Per cent.
	Tons.	Per cent. of Total Paper.	Tons.	Per cent. of Total Paper.	
Grass	3339·08	45·52	5208·91	54·82	+60·81
Other indigenous fibres	546·73	7·71	125·76	1·33	—77
China Clay	977·28	13·74	853·5	8·98	—12·66
Wood pulp	2349·91	33·03	3312·83	34·87	+40·97
	7115·00	100	9301·00	100	+33·53

The total consumption of wood pulp has indeed increased, but so has the total output of paper and the net result is that the proportion of wood pulp represented in the paper is practically the same in 1930-31 as it was in 1924-25. On the other hand, the proportion of grass represented in paper has risen from 45½ per cent. to nearly 55 per cent., an increase of 20 per cent. on the former figure. Thus, if any share of the credit of improvement is to be attributed to either of these materials it is obviously grass and not wood pulp which has been responsible. But, as a matter of fact, the improvement is the result of all that has been done in the renovation of the mill and in providing it with the necessary equipment for the better manufacture of paper.

7. At No. 2 Mill the introduction of increased quantities of wood pulp may for a time have been the deciding factor of improvement there, but the excellence of the bamboo paper now produced bears testimony to the work done there also in the way of general mill improvement.

8. Improvement in quality is difficult to assess. What it means in the way of extra expenditure, adding to cost, would be hard to estimate, but some allowance must surely be made for recognised improvement when comparing the manufacturing cost of the lower quality paper made in 1924-25 with that of the higher quality produced in 1930-31.

9. In conclusion, we would add that our policy has been primarily to make our products, whether from grass or bamboo, entirely acceptable to the market while effecting such savings as were within our immediate reach.

THE TITAGHUR PAPER MILLS COMPANY, LIMITED.

B.—ORAL.

**Evidence of Messrs. W. P. BOGILESS, K. B. SEN, M.Sc., A.I.C.,
A. W. WOOD, A. F. FAFFER, C.E.E., J. A. McKERROW,
A. S. CHICER and E. A. FELIANY recorded at
Calcutta on Sunday, the 2nd August, 1931.**

President.—Mr. McKerrow, you represent the Titaghur Paper Mills Company, Limited?

Mr. McKerrow.—Yes.

President.—What is your position?

Mr. McKerrow.—I am a Director of the Company and a Member of the Managing Agents' firm.

President.—Mr. Barbour?

Mr. Barbour.—My position is that of the former head of the Paper Department now engaged in connection with the renovations scheme.

President.—The total paid up capital of the Titaghur Paper Mills Company at present is Rs. 19 lakhs?

Mr. McKerrow.—Yes.

President.—So far as you can judge by registrations in the share ledger about 36 per cent. of the paid up share capital is held by Indian shareholders.

Mr. McKerrow.—That is right, about 38 per cent.

President.—I understand from your representations that there was a general reconstruction of the Company's capital in 1925.

Mr. McKerrow.—Yes.

President.—As the result of that reconstruction your ordinary share capital was reduced to 25 per cent. of its original value.

Mr. McKerrow.—Yes.

President.—And your preference shares were reduced to 40 per cent. of their original value.

Mr. McKerrow.—Yes.

Mr. Barbour.—The dividend of the preference shareholders was increased from 6 to 8 per cent.

President.—I understand in connection with the reconstruction scheme deferred shares were issued.

Mr. McKerrow.—Yes.

President.—And the condition on which deferred shares have been issued is that half the total deferred capital was issued at once to be taken up as paid up capital?

Mr. McKerrow.—Yes.

President.—And as far as the rest is concerned, the ordinary shareholders were given the option of taking it up within a period of 5 years.

Mr. McKerrow.—That is right.

President.—The whole of it has now been taken up?

Mr. Officer.—Very nearly.

President.—The deferred shareholders are entitled to dividend provided the ordinary shareholders have been paid 10 per cent.

Mr. Officer.—Yes.

President.—Half of the surplus left over after paying 10 per cent. to the ordinary shareholders would be divided among the deferred shareholders.

Mr. Officer.—Yes.

President.—You state in your replies that the present total capacity of your pulp plant taking the two mills together is 10,500 tons and the total paper capacity of the two mills is 20,800 tons.

Mr. Wood.—Yes.

President.—Now taking your pulp capacity, am I right in thinking that the pulp capacity of your No. 1 Mill is about 6,000 tons?

Mr. Wood.—About 6,500 tons.

President.—And the rest about 4,000 tons is the pulp capacity of No. 2 Mill.

Mr. Wood.—That is right.

President.—That is the capacity of No. 2 Mill as it is equipped at present?

Mr. Wood.—Yes.

President.—You have proposals for increasing the pulp capacity of your No. 2 Mill, proposals which have been sanctioned and are really in process of being carried out.

Mr. McKerrow.—That is so.

President.—The result of these extensions would be to increase the pulp capacity at Kankinara from 4,000 to 7,000 tons, is that right?

Mr. McKerrow.—Yes.

President.—So that when the extensions have been completely carried out, you would have a total pulp capacity in the two mills together of 13,500 tons.

Mr. Wood.—These are all bone dry figures.

President.—What would be the air dry equivalent of 13,500 tons?

Mr. Wood.—Approximately 10 per cent. more. It is about 15,000 tons of air dry pulp.

President.—Taking your total paper capacity at present of 20,800 tons, what is the pulp equivalent of that in terms of air dry pulp?

Mr. Wood.—Without any loading at all?

President.—Yes.

Mr. Wood.—23,100 tons.

President.—That means even when your extensions at Kankinara have been completed it would be necessary for you to import 8,000 tons of wood pulp.

Mr. Wood.—If it was all fibre furnish. In practice there is 10 per cent. loading.

President.—We have not taken any loading into account.

Mr. Wood.—That is right.

President.—You would require even when the extensions were completed to import 8,000 tons of wood pulp.

Mr. Wood.—Yes.

Mr. Barbour.—20,800 tons is made up partly of fibre and partly of loading.

President.—In that case the air dry pulp equivalent of 20,800 tons is wrong. I asked you for the air dry pulp equivalent of 20,800 tons of paper.

Mr. Wood.—I understood that you wanted to know the fibre content.

President.—If the air dry pulp equivalent of 20,800 tons of paper is 23,100 tons, then the figure of 8,000 tons stands. That is correct?

Mr. Wood.—Yes.

President.—When you gave evidence in 1924 before the Board you gave your pulp capacity as 17,000 to 18,000 tons.

Mr. Wood.—Yes.

President.—Now the reduction of your pulp capacity from 17,000 to 18,000 tons to the present figure of 10,500 tons is largely due to the reorganisation which has taken place in connection with Kankinara.

Mr. Barbour.—That is right.

President.—That has meant a reduction in the pulp capacity to the extent of about 7,000 to 8,000 tons. Is that a correct statement of the case?

Mr. Barbour.—It is a correct statement, but I could not say that it is a correct statement of fact for the reason that we didn't check the quantity given at the last enquiry with the figures given now.

President.—The figure of 17,000 tons that you gave in the last evidence was an approximate figure?

Mr. Barbour.—I imagine so. I was not present at the last enquiry.

Mr. Wood.—It was a theoretical estimate.

President.—Taking the actual figures as far as you are able to judge, by how much has the pulp capacity of the two mills been reduced in consequence of the experimental and reorganisation work undertaken at Kankinara?

Mr. Bookless.—I don't know what they took into account when they made the estimate in 1924-25. At that time there was a battery of digesters at No. 1 Mill which has since been taken out as obsolete.

President.—What is the capacity that you would put on the battery of digesters?

Mr. McKerrow.—We shall have to look up exactly the former figures.

President.—I am trying to state the case from your own point of view. On the figures of capacity that you state in your evidence, it looks to me that at present you have got necessarily to import about 11,000 tons of pulp.

Mr. McKerrow.—Yes.

President.—In order to work your machines to capacity.

Mr. McKerrow.—Yes.

President.—When your extensions are completed, you would still have to import 8,000 tons. That is a very considerable figure and I am trying to suggest that probably one reason why there is this increased margin which has got to be allowed for in respect of imported pulp is partly the result of reduction in capacity which has occurred as the result of your experiments and reorganisation work at Kankinara.

Mr. McKerrow.—That is right.

President.—I want to know what the position is exactly.

Mr. Bookless.—The capacity of the digesters would be 3,100 tons.

President.—You mean the battery of digesters?

Mr. Bookless.—Yes.

President.—They have been scrapped?

Mr. Bookless.—They are obsolete and not replaced.

President.—That would still leave about 4,000 tons. *Mr. McKerrow*, would you mind looking into this point and let me have a short note?

Mr. McKerrow.—Yes.

President.—As you arrange the work at present between the two mills, practically all the paper made in the main of grass is manufactured at No. 1 Mill?

Mr. McKerrow.—That is so.

President.—That is to say, paper containing approximately 70 per cent. of grass.

Mr. McKerrow.—Yes.

President.—All that is manufactured at No. 1 Mill, and No. 2 Mill manufactured up to 1930 practically entirely wood pulp paper.

Mr. McKerrow.—With the rags, etc.

President.—Yes, and in 1930-31 it produced also about 1,900 tons of bamboo paper, that is to say, paper equivalent to about 2,000 tons of bamboo pulp.

Mr. McKerrow.—Yes.

President.—Another difference that I notice between your No. 1 Mill and No. 2 Mill, is that the whole of the electrolytic plant is located at No. 1 Mill?

Mr. McKerrow.—Yes.

President.—The bleach that you require in both the No. 1 and No. 2 Mills is made in the electrolytic plant at No. 1 Mill and in addition to that it produces all the caustic soda required for No. 1 Mill, and the caustic soda required for No. 2 Mill is bought in the market.

Mr. Wood.—That is right.

President.—There is also a considerable difference with regard to power arrangements at the two mills. At No. 1 Mill you have got a power plant which is more modern in character and it has larger capacity than the power plant at No. 2 and I take it the reason why the power plant in No. 1 Mill has larger capacity is first that your pulp output is larger in No. 1 than in No. 2 and also that you require additional power for your electrolytic process. Does that correctly state the position?

Mr. McKerrow.—Yes.

President.—Taking your reply to question 3, you have now stopped manufacturing wrappers for your own use for the past three years.

Mr. Wood.—Yes.

President.—That is because you have found it not worth while to manufacture wrappers for your own use?

Mr. Bellamy.—Yes.

President.—It is more economical under present conditions to buy your wrappers?

Mr. Bellamy.—Yes.

President.—Could you give me an idea as to how that happens?

Mr. Bellamy.—It is not the mill practice at home to make wrappers and white papers in the same mill, because wrappers are made out of waste materials, not only is it waste, but dirty from a papermaker's point of view, and some of the dirt remains behind in the piping of the mill a long time after the mill has finished the run on wrappers. This dirt comes away slowly and causes a great deal of trouble in the event of white papers following on after the wrappers. That is why we don't like making our own wrappers, and on account of wrapping and packing papers being unprotected, there is not sufficient business to justify the isolation of a machine specially for them.

President.—What happens to the waste material out of which you originally used to make wrappers—is it simply thrown away?

Mr. Bellamy.—Some of it is thrown away and some sold.

President.—If the protective duty had been applied to wrappers also the position would have been different?

Mr. Bellamy.—Yes. Presumably there would be a mill making wrapping papers in this country.

President.—In your own case if there had been a protective duty on wrappers, the position would probably be altered because the wrappers that you buy would bear the protective duty.

Mr. Bellamy.—That is so. There is another point also that instead of making those wrappers—900 tons—we can make 500 tons of high class paper.

President.—That is to say, the paper machine capacity equivalent to the wrappers that you might make for your own use could be better utilised for making white papers.

Mr. Bellamy.—That is so.

President.—*Question 6:* The quantity of grass that you require for manufacturing one ton of pulp and one ton of paper as you originally gave it was an inaccurate figure?

Mr. Barbour.—The figure of 16,663 tons given in Forms I and III should have been stated as 15,663 tons.

President.—This figure of 2·44 for pulp and 3·12 for paper which you gave in your original reply corresponded to a total consumption of 16,663 tons of grass?

Mr. Barbour.—That corresponded to an average over the period.

President.—My point is this: in your original replies the quantity of grass required for making one ton of paper is given as 3·12. Now 3·12 was based on a total consumption of 16,663 tons of grass.

Mr. Wood.—We work it out separately.

President.—In a different way?

Mr. Wood.—Yes.

President.—Supposing the correct figure for consumption of grass is 15,663 tons, the figure that you have given now, does that make any difference as regards the quantity of grass required for one ton of paper?

Mr. Wood.—It makes a difference as regards quantity of grass required for one ton of paper, but not as regards the quantity of grass required for one ton of pulp, because we make independent tests to find out the yield of pulp. The Chemist gives it. Inside every digester we put a small quantity of grass in a wire bag. It is weighed before it is put into the Digester and it is weighed when it comes out, and thus we find the yield.

President.—What is the alteration you would suggest in the figure which you have given for grass?

Mr. Wood.—Instead of 3·12, I would make it 2·8.

President.—And the pulp figure stands?

Mr. Wood.—Yes. That is the bone dry pulp.

President.—Bone dry unbleached pulp?

Mr. Wood.—Yes.

President.—If you take 2·8 tons as the quantity of grass required for one ton of paper, what difference would it make?

Mr. Wood.—It would bring the yield into paper up to 35 per cent.

President.—Give us the exact figure.

Mr. Wood.—It is 35·6 per cent.

President.—That 35·6 per cent. is the yield estimated in terms of the fibre content?

Mr. Wood.—Yes.

President.—It does not include loading?

Mr. Wood.—No.

President.—I am right in thinking that it is a very low yield?

Mr. Wood.—Yes.

President.—How would you account for the fact that after all these years' work on grass, the yield that you get from grass is so low as 35·6 per cent.?

Mr. Wood.—If we used all the waste materials, we would then get the benefit of the wrappers in our yield.

President.—That to my mind is not a convincing explanation. It might account for a small difference.

Mr. Wood.—In the first place.

President.—I must tell you that this theory about wrapper production was placed before the Tariff Board in 1924; that is to say, a good deal of the low quality paper and relatively inefficient yields were accounted for then on the ground that it was necessary to ensure rapid production under war conditions. We are having the same theory now.

Mr. Wood.—As a matter of fact our yield has so improved in the last few months that we get now 38 per cent.

President.—Have you any idea as to what is the total cellulose content of the kind of Sabai grass that you use?

Mr. Sen.—I would not call it anything more than 45.

President.—Have you made exact determinations?

Mr. Sen.—We have made various determinations in the laboratory as well as in the mill. The figure of 2.44 is found to be the average figure of every day work in the mill.

President.—That average figure is 45 per cent.

Mr. Sen.—That 45 per cent. is air dry and is equivalent to 41 per cent. bone dry.

President.—How is it that out of 41 per cent. you lose 5 per cent.?

Mr. Sen.—A reduction of 5 points in the yield figure means about 12 per cent. loss. We have our bleaching loss. In the case of grass it is anything between $7\frac{1}{2}$ and 8 per cent. The remaining 3 or 4 per cent. is mechanical loss.

President.—In comparison with results obtained on the quantity of grass, it is rather a low yield.

Mr. Sen.—It is just a shade on the low side.

President.—It is rather considerably on the low side.

Mr. Sen.—I would not say considerably.

President.—I should have thought that the yield of 41 to 42 per cent. was normally obtainable from grass.

Mr. Sen.—Bleached you mean?

President.—Unbleached.

Mr. Sen.—We get 45 per cent.

President.—And bleached?

Mr. Sen.—41 to 42 per cent.

President.—In Esparto it is higher?

Mr. Sen.—Yes.

President.—Am I wrong?

Mr. Sen.—No, it is higher.

President.—Have you got figures?

Mr. Sen.—There are different kinds of Esparto giving different results. Some of them contain about 45 per cent.

President.—Without going into the question of yields possible out of different Espartos, you would admit that the yield of 35 to 36 per cent. of paper from grass is one on which a very considerable improvement is possible.

Mr. Sen.—It depends on how this yield into paper is calculated.

President.—There is no room for a theoretical disquisition.

Mr. Barbour.—We could get better yields than we are getting.

President.—You got a better yield in 1924 than you do now.

Mr. Barbour.—Yes.

President.—No kind of theoretical argument can get you out of that. Since protection was granted, your yield from grass, instead of going up, has gone down.

Mr. Barbour.—That is explainable. We have greatly increased the quantity of grass we put through. That means we are pressing our output again as we did during the war. I think we could put forward figures to show that. As we have explained in our replies to the Supplementary Questionnaire the total production on the bone dry basis in 1924-25 amounted to 4,094 tons and in 1930-31 it is nearly 6,000 tons, the exact figure being 5,901 tons. That is an increase of 50 per cent. which we are putting through our plant.

We require additional equipment. We cannot instal that until we decide this question of bamboo and we have got down to the best system of digesting bamboo in suitable digesters. We are therefore holding back our reconstruction of the digesters at No. 1 Mill until we have settled the bamboo question.

President.—It is largely a question of improving your digester plant?

Mr. Barbour.—It is a question of improving the capacity. We are losing yield now because of the difficulty I have mentioned.

President.—When I looked through your replies and tried to estimate for myself what progress has been made since 1925 apart from any improvement in costs due to fall in prices of materials for which you are not responsible, I find that it is rather difficult for me to persuade myself that things have been very satisfactory. There is first this question of yield that you get from grass which is lower than the yield which is being obtained in certain other mills. On top of that there is the soda recovery plant which, although it is better than it was in 1924, is still far too low in the matter of recovery. I think I am justified in making this tentative statement that your practice is not efficient. The yield from grass and the percentage of recovery of soda, as far as a layman can judge, are so to speak two determining tests of the efficiency of the paper plant and judged by these two tests I am justified in saying that your plant cannot be considered an efficient plant.

Mr. Barbour.—Our plant is not fully efficient. We know that. Our point of view is that we are doing the best we can within the time we had. We are in a state of transition. We are not anywhere near the efficiency we expect to get. We have made certain economies, savings, etc., in conversion costs, steam and general mill working apart from grass digestion.

President.—You have been able to bring down the costs of your grass.

Mr. Barbour.—Yes.

President.—Whether the credit for that is due to you or to other circumstances, you have certainly benefited by the general fall which has taken place in the price of coal.

Mr. Barbour.—Yes.

President.—You have certainly improved your power practice by the new steam turbine. Apart from these two factors I am unable to detect any improvement whatsoever.

Mr. Wood.—There is also the fact that the quality of paper has improved considerably since 1924-25.

President.—Which to a very large extent can be put down to the fact that you are using imported pulp?

Mr. Wood.—I think that our proportion of imported pulp used in 1924-25 and in 1930-31 is much the same. There is very little difference in that.

President.—There is a considerable difference.

Mr. Wood.—In the percentage or the total quantity used.

President.—Would you be able to give me in respect of particular classes of power how the furnish is made up?

Mr. Wood.—We can.

President.—There is a question that appears later with reference to which I am going to raise this question on bamboo. The quantity of bamboo that you required for one ton of paper on the results of your working in 1924-25 is 3.12 tons.

Mr. Wood.—Yes.

President.—That gives you bone dry bamboo pulp of 40 per cent.

Mr. Wood.—Yes.

President.—And 3.12 corresponds to 32 per cent.

Mr. Wood.—Yes.

President.—That again is very low. Here we are on more definite ground because we know what the cellulose content of the kind of bamboo that you

are using is. 44 per cent. air dry implies a loss of at least 4 to 5 per cent. of cellulose.

Mr. Wood.—Yes.

President.—And 32 per cent. yield of paper means a loss of approximately 9 to 10 per cent.

Mr. Wood.—Yes.

President.—Now it is very difficult to say that they are satisfactory figures.

Mr. Sen.—With regard to this yield of bamboo I might suggest one thing. We are always over-bleaching bamboo to a certain extent in order to make it acceptable to the market, being a new fibre.

President.—You are explaining the various methods employed which have brought about this wastage?

Mr. Sen.—Yes. With more experience of working the bamboo and when we know more about bamboo, this yield would certainly go up—I mean the yield into paper. As I told you just now, in the case of bamboo pulp we are always over-bleaching it.

President.—Why do you do it?

Mr. Sen.—The idea is to make it acceptable to the market. We are now in the last two months trying to cut down our caustic as well as our bleach, and the result which you saw the other day in the mill is from the use of 2 per cent. less caustic and about 2 per cent. less bleach.

President.—You have been experimenting with bamboo on a small scale for at least four years.

Mr. Sen.—We began in 1926.

President.—Since 1926 up to 1930 you produced bamboo pulp on a scale of about 2/300 tons.

Mr. Sen.—Yes.

President.—Having done that amount of work on an experimental scale for four years and having produced bamboo pulp on the scale of 2,000 tons a year, I find it difficult to believe that you have done your best.

Mr. Sen.—There I would refer you to Mr. Wood who knows how the paper yield has been calculated.

President.—Let us have it one way or the other. Is your yield figure right or not? If it is wrong, then we have nothing to go upon.

Mr. Wood.—The paper yield is right. We find the pulp yield from the tests at the digester.

President.—Let us leave out the paper yield. Let us take the pulp yield which is low enough in all conscience.

Mr. Sen.—It is not low when you consider the caustic process.

President.—In the caustic process it is possible to get somewhere about 44 to 45 per cent. quite easily.

Mr. Sen.—Not bone dry. Mr. Raitt's process of fractional digestion with sulphate will give 2 per cent. more yield. That is well known.

President.—It gives 2 per cent. more yield.

Mr. Sen.—It is only 43 or 44 per cent. in actual practice. That is air dry. Those figures I got from Dehra Dun where I had been to see some of the *strictus* bamboo digested according to Mr. Raitt's method were 43.5 per cent.—a little less than 44 per cent., and the bleach figure was 12.5.

President.—What is your bleach figure?

Mr. Sen.—The bleach figure (that is the mill figure) that we gave you was 15.

President.—That is to say, 15 per cent. of the unbleached pulp.

Mr. Sen.—Yes, bone dry of course.

President.—Let us convert that 15 per cent. into air dry.

Mr. Sen.—About 13½ per cent. If we take into consideration the deterioration loss in the bleaching liquor that we get from No. 1 Mill, that of

course is dependent on the season of the year. During the summer it deteriorates more than in the winter, that is due to temperature. We may take the deterioration loss at about 15 to 20 per cent. If we take that, then the average figure for bamboo will come out to something in the neighbourhood of 11 on air dry basis.

President.—Let me see how you calculate yield in the paper mill?

Mr. Wood.—We allow so much for each fibre, viz., 75 per cent. for waste paper and 85 per cent. for wood pulp.

President.—As regards the way in which you calculate your yields you take an average percentage for all materials except grass.

Mr. Wood.—Yes.

President.—Your gain or loss is put on grass.

Mr. Wood.—Yes.

President.—Grass so to speak is representing the margin of error.

Mr. Wood.—Yes.

President.—So that your bamboo figure represents the actual percentage over a period of years.

Mr. Wood.—Yes.

President.—There is nothing theoretical about it.

Mr. Wood.—If we had been too generous to other materials it would apply to bamboo.

Mr. Barbour.—The same applies to bamboo in No. 2 Mill as applies to grass in No. 1 Mill.

President.—Bamboo bears the margin of error in No. 2 Mill?

Mr. Barbour.—Yes.

President.—So that both on bamboo and on grass we are on grounds which are not actually firm. That makes it very difficult for us to proceed.

Mr. Wood.—It is only by leaving the balance between grass and bamboo...

President.—Would you be able to work out for me a figure of yields for grass and for bamboo which would conform a little more than these figures to the actual position?

Mr. Wood.—I will do that.

President.—Is it possible for you to work out your yield in such a way that the gain or loss is placed on some other material than grass or bamboo.

Mr. Wood.—I will work it out in two or three different ways.

President.—There is one other figure that I want to get. You take 2·8 tons of grass which corresponds to one ton of fibre content in the paper.

Mr. Wood.—Yes.

President.—I want to know, taking 2·8 tons of grass, what sort of yield of finished paper you would get as it goes on to the market including the loading. The way I am trying to look at it is this. 2·8 tons is equivalent to one ton of paper. What is the percentage of loading?

Mr. Wood.—10 per cent. on an average.

President.—2·8 tons of grass would correspond to 1·1 ton of finished paper including loading?

Mr. Wood.—That is approximately right.

President.—When you gave evidence in 1924 you said that your average loading was $\frac{1}{10}$ th. The average loading has been considerably reduced now?

Mr. Wood.—Yes.

President.—And that is one of the matters in which improvement in quality has resulted, that is to say, your paper now not merely looks nice, but is substantially nice. That is what is means?

Mr. Wood.—Yes.

President.—This 1/10th loading is a correct figure?

Mr. Wood.—Yes. 1/10th is the present practice but it is gradually coming down.

President.—Do you calculate this 1/10th on the finished paper or the fibre content of the paper?

Mr. Wood.—On the finished paper.

President.—How am I to calculate this 1/10th? Do I calculate it on the finished paper weight or the fibre content of the paper?

Mr. Wood.—On the finished paper weight. 9/10th is fibre and 1/10th is clay. The position is very fully stated in Form III—1,727·88 tons of paper from china clay, total paper made in 1930-31 was 19,260 tons. In the previous year it was 1,848·99 tons paper from china clay and the total paper made was 18,741 tons, that is to say, paper from china clay represented slightly over 10 per cent. of the paper made in 1929-30 and slightly under 10 per cent. in 1930-31.

President.—Coming now to question 7, when you gave evidence in 1924 you gave the total supply of grass in your area as 11 lakhs and it is now 10 lakhs.

Mr. Officer.—Yes.

President.—The difference arises largely in respect of the Sahebgunge area. Your estimate was 4 lakhs maunds of available grass in that area in 1924; it is now 2 lakhs maunds.

Mr. Officer.—Yes.

President.—You are expecting that with some re-organization of the arrangements in connection with the area it might be possible to put the yield back to the higher figure?

Mr. Officer.—We hope to.

President.—That is at present very much in the nature of a hope!

Mr. Officer.—It is.

President.—The available supply as you gave it for the western circle in 1924 was 4 lakhs; it is 5 lakhs now. That is to say, in 1924 while out of 11 lakhs maunds of total available grass 4 lakhs came from the Sahebgunge area and 4 from the Western circle, now out of 10 lakhs maunds of available supply 2 lakhs is in Sahebgunge and five in the Western circle. In other words you have to go more and more for your available supplies of grass to remoter areas?

Mr. Officer.—Yes.

President.—Naturally therefore if other circumstances had not intervened your cost of grass should be going up?

Mr. Officer.—Yes, the incidence of freight would be greater.

President.—Considerably greater because Sahebgunge is only 200 to 300 miles from your mills and the other is 800 to 900 miles.

Mr. Officer.—Yes.

President.—But in spite of it your price of grass has come steadily down?

Mr. Officer.—Yes.

President.—When the Board enquired in 1924 the price of grass was something like Rs. 57 and the Tariff Board estimated that the very lowest price that you might attain for grass was Rs. 50 per ton. You have actually touched Rs. 49 now?

Mr. Officer.—Yes, last year.

President.—In spite of the fact that of the areas open to you, you have got to exploit the remoter and more expensive areas. Can you explain to me briefly how this has happened?

Mr. Officer.—Prior to 1924-25 this company worked the Western circle areas and at previous dates the Nepal areas departmentally. It was decided then or shortly after that departmental working was too expensive. Con-

tractors were engaged to work all the areas for us and as a result of that on the whole we might say we got cheaper grass.

President.—You are expecting that the price of grass may be still lower than Rs. 49?

Mr. Officer.—If we can improve the yield in the Sahebgunge area, yes.

President.—Otherwise you don't expect to get a lower figure than Rs. 49?

Mr. Officer.—We might get it down by one or two rupees.

President.—We were told when visiting some other mills using grass that one of the most important reasons for the fall in the price of grass was that the use of imported pulp opened up for the paper manufacturers an alternative which placed them in a position of advantage to bargain with the contractors. What is your experience in this matter? The position is this: You are developing your bamboo plant in No. 2 Mills; you are importing considerable quantities of wood pulp and wood pulp is considerably cheaper and therefore if the grass contractor does not give you your supplies of grass at a cheaper price you may possibly say "We will use wood pulp in place of grass". That would give the mills considerable advantage in the bargain that they may make with the grass contractors.

Mr. Officer.—Actually after 1924-25 and up to 1930 the quantity of grass which we have handled in each of these years has remained more or less constant.

President.—That does not necessarily affect the problem because the poor contractors have got to sell it.

Mr. Officer.—We have always purchased such quantity of grass as our available plant at Titagur can consume.

President.—As a matter of experience you don't think that there is any actual force in that statement?

Mr. Officer.—No. What I think is that the grass contractors are beginning to realise that bamboo is coming into the market as a competitor against grass.

President.—And would probably consider it worth their while to reduce the price of grass in order to make it more attractive?

Mr. Barbour.—We always have had the opportunity of negotiating with our contractors without actually resorting to other sources for materials. We did it in 1912 when we turned to wood pulp just to see how it would work out. It was not to defeat the contractor but in order to see what results we could get in the matter of improved output. We ran No. 2 Mill on imported wood pulp for six months. The contractors knew all along that we were going to do it and the fact that we were importing wood pulp made no difference whatsoever at the time, but I showed what could be done.

President.—Getting on to a slightly different but somewhat allied subject, suppose we seriously considered the question of levying an import duty on wood pulp, would that affect the cost of grass?

Mr. Barbour.—I think that might happen.

President.—It would affect the price of grass only on the theory I have amplified—either the possibility of importing wood pulp helps you to make a better bargain with your contractors or an import duty on wood pulp would have no consequence on the price of grass.

Mr. Barbour.—We have always been able to use that possibility as a lever without making it an actuality.

President.—I should not try to make such a sharp distinction between actuality and possibility. You say in course of your reply to this question that the lease in respect of the western circle has now been granted to some other firm.

Mr. Officer.—Yes, to the best of our knowledge.

President.—What is going to be the effect of it on your supply of grass hereafter?

Mr. Officer.—We may buy our grass from the western circle just the same from this man.

President.—As far as you know this does not mean that as the grass in that area is leased to another firm it is in the hands of parties who may supply to any other manufacturer who agrees to take it. My point is simply this, that the lease is going to pass out of your hands to some other party next year. Since 5 lakhs out of 10 lakhs maunds of the available supply of your grass which has now come to 7 lakhs comes from that circle, I certainly thought when I read your reply that there would be considerable restriction in the supply of grass. Therefore I am asking you what is going to be the situation with regard to that circle now that another party has got hold of it?

Mr. Officer.—As regards the immediate future we shall be able to get grass from the western circle for perhaps three years.

President.—Supposing we were considering the question of protection for a period of ten years, what would be the effect of this on the supplies available from the western circle?

Mr. Barbour.—Then we hope bamboo will come in, as it has.

President.—Apart from the question of bamboo, simply as a result of the new arrangement with regard to the working of the western circle over a period of 10 years, am I justified in thinking that grass will be very difficult to get?

Mr. Barbour.—Not from Sahebgunge.

President.—If Sahebgunge can yield only 2 lakhs maunds?

Mr. McKerrow.—We are very hopeful that as a result of Government supervision the Sahebgunge yield will again go up.

President.—Assuming that your hopes about Sahebgunge do not materialise and assuming that this other party has got hold of the western circle, in the light of these facts what would be your position for the supply of grass over a period of 10 years?

Mr. Officer.—We may have difficulty.

President.—That is to say if you wanted to have grass equal to the quantity that you have been using recently the price would go up considerably?

Mr. Officer.—We are using approximately about half the available quantity. From the Nepal area and from Sahebgunge and the Eastern circle (and excluding the Western circle) we estimate that we can still obtain 5 lakhs maunds.

President.—As far as the possibility of getting say 7,000 tons of pulp from grass over a period of 10 years, that could be got without any substantial increase in price?

Mr. Officer.—Without material increase.

President.—You could get your 7,000 tons comfortably?

Mr. Officer.—Yes.

President.—Coming to the question of the supplies of bamboo (Q. 8) you want to keep your note on the Cuttack scheme confidential?

Mr. McKerrow.—Yes.

President.—That is to say you don't wish us to make any reference whatever to the facts or the figures in your note?

Mr. McKerrow.—No.

President.—That is rather difficult. I will tell you why, because in the original enquiry the Tariff Board regarded the possibility of the Cuttack proposition with very considerable approval and if there is some possibility of a definite scheme materialising in Cuttack, it would be necessary for us to give some indication of what has happened or is likely to happen in the near future. We should be quite unable to make use of your note if it

were to be kept confidential. Supposing I gave a very attractive figure for the cost of pulp and then told the Government and the Legislature that the cost of bamboo would be reduced to this figure, it would have no meaning for them if I did not give them some indication of the geographical position.

Mr. Barbour.—Our idea was to let the Tariff Board and the Government know that we had such a project under consideration. We have not got very far towards it. We are only getting the project developed gradually and in the first place at the paper mills. We are first of all testing the possibilities of the forests.

President.—That is perfectly true, Mr. Barbour. But then we are simply an advisory body. The people who ultimately decide these matters are the Legislature. We are simply the eyes and ears of the Legislature. It is no use telling us things in confidence.

Mr. McKerrow.—There is nothing that need be held specially confidential about the note that has been submitted.

President.—I should like to be able to say that there are areas in this country. I have got to state definitely the particular advantages of the areas where it is possible to produce bamboo at a cost much better than anything attained so far and if you say I am not to identify the facts and figures with a particular geographical locality, the thing would have no meaning.

Mr. McKerrow.—Then we will put this in.

President.—Can you tell me approximately the cost of transporting? First let us get on to the transporting facilities. I understand from the note that the transport facilities which are available at Cuttack for bamboo extracted from the Angul area are on the whole fairly good. But there are various difficulties which have got to be considered before a definite scheme is undertaken.

Mr. McKerrow.—Yes.

President.—I am speaking of transport facilities for the time being. What is proposed is that from the point of extraction in the forests the bamboo would be conveyed either by cart or by motor transport to the Depot on the Mahanadi river.

Mr. McKerrow.—Yes.

President.—From the river depôt to Cuttack bamboo would be floated in rafts.

Mr. McKerrow.—Yes.

President.—And at Cuttack you have the mill which would convert the bamboo into pulp and the pulp would be conveyed by rail to the mills here.

Mr. McKerrow.—Yes.

President.—That is the outline of the scheme?

Mr. McKerrow.—Yes.

President.—I understand from what you say that it is difficult to secure sufficient carting facilities, that is to say for transport from the extraction area to the river depôt. Therefore at present you are taking the whole quantity by motor transport.

Mr. Officer.—Not the whole quantity.

President.—Out of 8,000 tons which you extracted last year what proportion were you able to get by cart?

Mr. Officer.—Taking the whole year's extraction probably not more than ¼th was transported by cart.

President.—¾ths were conveyed by motor lorries?

Mr. Officer.—Yes.

President.—Are motor lorries more expensive than carts?

Mr. Officer.—They are slightly.

President.—That is to say if it became really difficult to get a sufficient number of carters to take charge of the whole supply of bamboo, the fact that you have got to convey it by motor transport does not necessarily bar the scheme.

Mr. Officer.—No. Only carts are more able to gain access into certain parts of the forest.

President.—It would be more convenient from that point of view?

Mr. Officer.—Yes, they have this advantage.

President.—The floating has got to be done in certain times of the year?

Mr. Officer.—Yes.

President.—You cannot float it before the monsoon?

Mr. Officer.—Floating season starts as soon as the river begins to fall. They don't like to risk it when the river is rising. As soon as it starts to fall, they commence floating.

President.—That is what part of the year?

Mr. Officer.—About the middle of August.

President.—Then the floating season may be said to begin in August.

Mr. Officer.—Yes.

President.—How long does the season last?

Mr. Officer.—It varies slightly. The season ends probably at the end of January and sometimes at the end of February.

President.—That is 6 to 7 months.

Mr. Officer.—Yes.

President.—So that all the bamboo extracted in the area has got to be transported during that season.

Mr. Officer.—Yes.

President.—I understand from what you say that the state of the roads after the monsoon between the extraction point and the river depôt might place a limit on the transporting facilities.

Mr. Officer.—Not over the river; because in practice we extract during the dry season when we cannot float and we build up sufficient stocks at our river depôt which are available to be floated during the monsoon months although extraction is not then taking place from the forest.

President.—That is to say the extraction has got to be done before the roads become bad on account of the monsoon.

Mr. Officer.—That is correct.

President.—You do all your extraction within that time and the floating may be done at any time during the six or seven months.

Mr. Officer.—Yes.

President.—What is the distance from Cuttack by rail to Titaghur?

Mr. Officer.—About 254 miles to Howrah.

President.—Assuming the freight on pulp is the same as the freight on paper, what freight would that mean per ton of pulp?

Mr. Officer.—We have given an estimated figure of Rs. 10.

President.—That is calculating on the same basis as on paper?

Mr. Officer.—No. At that time that was taken as an estimated figure which we obtained taking into consideration the freight concession which we are at present enjoying for raw bamboo.

President.—Assuming the freight on pulp is the same as the freight on raw bamboo?

Mr. Officer.—Not the same.

President.—The equivalent of it?

Mr. Officer.—No. We estimated that we would get our pulp to Calcutta at Rs. 10 per ton in the light of the concession rates which the railways quote us for raw bamboo.

President.—How do you get it? I don't follow.

Mr. Officer.—It is an estimated figure.

President.—It is a pure guess.

Mr. Officer.—Well, if you mean

President.—Can you tell me how much this Rs. 10 is in terms of pies per maund per mile?

Mr. Bellamy.—The average freight on paper per maund per mile may be taken as .2 pies.

President.—Would Rs. 10 for this distance from Cuttack to Titaghur correspond to .2 pies per maund per mile? What is the distance?

Mr. Wood.—280 miles.

President.—It is a little over .2 pies per maund per mile.

Mr. Wood.—Yes.

President.—It is more or less the paper freight.

Mr. Wood.—Yes.

President.—What is this bamboo that you call Daba? What is the botanical name?

Mr. Officer.—*Bambusa arundinacea*. That is a big bamboo which is found in several parts of India. You get it in Bengal.

President.—You get it in Bengal?

Mr. Officer.—Yes, the species of *Bambusa arundinacea*.

President.—The cost of bamboo that you give here in answer to question 9 which you work out as Rs. 38, that is air dry bamboo?

Mr. Wood.—Yes.

President.—If you were to put it on bone dry basis it is Rs. 43 taking about 15 per cent.

Mr. Officer.—It is 10 per cent. moisture in that air dry figure.

President.—On the bamboo you would allow only 10 per cent.

Mr. Officer.—Yes.

President.—That would be very nearly Rs. 42.

Mr. Officer.—Yes.

President.—Coming to question 10, railway freight on materials, how does the rate on grass compare with the rate on bamboo?

Mr. Officer.—The freight per maund per mile on grass is .1 pie and on bamboo .12 pie. The minimum wagon capacity of 200 maunds in connection with bamboo sometimes increases that rate in actual practice. Sometimes we find it impossible to load 200 maunds of air dry bamboo in wagon loads.

President.—That difficulty won't arise in the case of grass.

Mr. Officer.—No. In the case of grass we are able in practically every case to obtain the loading stipulated.

President.—You don't make a serious point of this question of terminal charges. It is a very small point.

Mr. Officer.—Yes.

President.—That is to say it is only now one pie which is chargeable to both materials, that is to say grass coming in and also to finished paper going out.

Mr. Officer.—Yes.

President.—Including the pie on paper, that is to say adding the pie on paper to the additional charge on the material which is necessary for

one ton of paper, altogether it might mean 5 annas per ton of paper. It is not worth bothering about.

Mr. Officer.—That is correct.

Mr. Rahimtoola.—In answer to question 1, you stated that at the time of the last enquiry, 70 per cent. of the capital of the Company was held by Indians. What is the position to-day exactly?

Mr. Officer.—66 per cent. of the ordinary shareholders are Indians.

Mr. Rahimtoola.—On page 4 you say "At the time of the last enquiry it was estimated that approximately 70 per cent. of the capital of the Company was held by Indians". May I know what the position is to-day as regards this point?

Mr. Officer.—62.5 per cent. is held by Indians.

Mr. Rahimtoola.—To-day?

Mr. Officer.—66 per cent. of the shareholders are Indians.

Mr. Rahimtoola.—I want the capital of the Company.

Mr. Officer.—38.6 per cent. of the capital of the Company is held by Indians.

Mr. Rahimtoola.—May I know what do you attribute such a big selling on behalf of the Company to?

Mr. McKerrow.—We could not give you any reason.

Mr. Rahimtoola.—May I know how much of the capital is held by the Managing Agents?

Mr. Officer.—We will send you the figures.

Mr. Rahimtoola.—I understand that the majority of your Directors are at present Indians.

Mr. McKerrow.—Yes.

Mr. Rahimtoola.—You gave us to understand that the battery of digesters that you used in 1924-25 were scrapped.

Mr. McKerrow.—They are being used as containers. They were scrapped for their original purpose.

Mr. Rahimtoola.—What was the reason?

Mr. McKerrow.—Antiquated.

Mr. Rahimtoola.—You have stated in answer to question No. 4 statement A, that in 1925, 67 per cent. of your production was writing and printing paper.

Mr. Bellamy.—Yes.

Mr. Rahimtoola.—And only 3 per cent. was wrappers.

Mr. Bellamy.—Yes.

Mr. Rahimtoola.—In 1931 it is 74 per cent. of the total production.

Mr. Bellamy.—Yes.

Mr. Rahimtoola.—And 3 per cent. has been eliminated, because you are not now making wrappers.

Mr. Bellamy.—That is so.

Mr. Rahimtoola.—You have now told us that it is advantageous not to make wrappers. Will you tell me how this 3 per cent. has increased your output of other papers.

Mr. Bellamy.—I couldn't tell you exactly where, but I think you will find that these wrappers have been substituted by better qualities of paper.

Mr. Rahimtoola.—The general increase amounts to this. In the year 1925 you were making 15,500 tons and in 1931 about 19,000 tons. Do I understand that the 7 per cent. increase represented by the writing and printing papers is the normal increase?

Mr. Bellamy.—That is so.

Mr. Rahimtoola.—I would like to know where you have benefited by not making wrappers?

Mr. Bellamy.—The quantity of white paper made in place of wrappers amounted to about 500 tons. That is included in the increased output figure.

Mr. Rahimtoola.—That is included?

Mr. Bellamy.—It is included in the increased output.

Mr. Rahimtoola.—Now in reply to Question 5 you have given Annexure B in which you show the steady rise of the amount of wood pulp used by you.

Mr. Barbour.—Yes.

Mr. Rahimtoola.—In 1925, you used 6,725 tons and in 1931 10,206 tons of wood pulp.

Mr. Barbour.—Yes.

Mr. Rahimtoola.—You have stated elsewhere that the reason for this increase of wood pulp was due to your efforts to keep the paper mills going.

Mr. McKerrow.—Yes, that is correct.

Mr. Rahimtoola.—It is owing to financial stringency that you are not able to manufacture as much pulp as you want economically or to put in new machinery in the pulp section?

Mr. McKerrow.—Yes.

Mr. Rahimtoola.—You gave us to understand just now in reply to the President's question that you would, as at present equipped, be permanently using about 8,000 tons of wood pulp.

Mr. McKerrow.—Yes, as at present equipped.

Mr. Rahimtoola.—May I know how you wish to remedy that state of affairs?

Mr. Barbour.—In our digester house at Kankinara we are providing so that we can extend the digester plant as soon as we have settled by experience with the new plant that it is the best thing for our purpose. We intend to go ahead at Titaghur and put in new digesters there and thus increase the capacity of the pulp plant.

Mr. Rahimtoola.—You will be able to reduce substantially the amount of wood pulp which you will be using for some time to come?

Mr. Barbour.—Yes We should be using for a year or two substantially the same amount of wood pulp which we are using now. Even with the reduction in the amount of wood pulp as a result of extensions based on experience gained at Kankinara we would still be using a substantial quantity.

Mr. Rahimtoola.—You agree with the opinion expressed by the Tariff Board in 1925 that Sabai grass has reached its limit?

Mr. McKerrow.—We might discover new fields.

Mr. Officer.—We agree with the statement that the limit at which supplies of grass can be had at an economic price has been reached.

Mr. Rahimtoola.—You also agree with the statement made by Sir Charles Innes so far as the paper industry is dependent on grass that its claim for protection fails.

Mr. McKerrow.—We don't agree with that.

Mr. Rahimtoola.—I do not know why then you state here in your reply "We are not concerned to comment on this declaration but point out that the former almost absolute dependence on grass has disappeared". That is to say you feel the same way though you don't want to say so.

Mr. Barbour.—We have been asked to give evidence with regard to the working of the Bamboo Paper Industry Protection Act and we have to justify our case from that point of view.

Mr. Rahimtoola.—You know perfectly well that at present the existing duty also gives an advantage to a mill which is working on grass and other raw materials and therefore we have to find out considering the strong line of action taken by the Legislative Assembly on the recommendation of the Tariff Board for the exclusion of grass

Mr. Barbour.—We feel that grass is a fibre which possesses and will always possess a value to the Indian Paper Mills. Although the quantity may not be such as to supply the increasing requirements of India, yet it is such an important fibre that we don't wish to say anything on our part to condemn it.

Mr. Rahimtoola.—It is not a question of condemnation; it is a question whether the industry which uses grass can stand without protection and has got enough raw material at its disposal. It is these tests which have to be applied for granting protection to the industry and you have already admitted, as far as grass is concerned, that the industry has reached its limits and therefore the statement must stand unless the industry fulfils the three conditions laid down by the Fiscal Commission.

Mr. McKerrow.—Yes, as far as the industry in general is concerned.

Mr. Rahimtoola.—There was a reply made here to the President's question which I was not able to follow. Regarding the question of efficiency it was pointed out that you were over-bleaching the bamboo pulp in order to make your paper acceptable to the market. I have not been able to understand exactly what it means.

Mr. Sen.—The question was this. The paper yield was considered to be low and one of the reasons I suggested was that as bamboo was a new fibre we did our best to make it as good as possible. The shade of our bamboo pulp should be as white as we can make it. That has been our intention from the very beginning as this is a new fibre. That is why I have suggested that one of the reasons for this low yield is that we are doing a little more bleaching than is necessary.

President.—You mean the chemical loss in the bleaching of pulp.

Mr. Sen.—Yes

Mr. Rahimtoola.—Was it due to the fact that it was an experimental measure?

Mr. Sen.—Yes, in a way.

Mr. Rahimtoola.—Is that experimental stage over now?

Mr. Sen.—As I was telling the President, we are now satisfied that we can make paper acceptable to the market and we are now trying also to reduce our chemicals and in the last two months we have as a matter of fact been able to reduce our chemicals, caustic as well as bleach. We expect with the reduction of these chemicals our yield will go up.

President.—This is in regard to bamboo?

Mr. Sen.—Yes.

Mr. Rahimtoola.—You have stated that as far as the reduction in the cost of grass as between 1929-30 and 1930-31 is concerned the reason is due to a new material, viz., bamboo. I don't think that is really the point at issue.

Mr. Officer.—The reason for the reduction which has taken place in the cost of grass with reference to those two years is explained by this little note at the bottom of the statement on page 10:—

“The royalty payable by the Company being more or less constant throughout the period, the nett rates per ton naturally varies in accordance with the quantity delivered in any one season.”

The royalty remaining constant, the incidence was greater on the smaller quantity in 1929-30 season.

Mr. Rahimtoola.—You pointed out to us that you gave up departmental working of the forest and adopted the contracting system.

Mr. Officer.—Yes, being cheaper and more economical.

Mr. Rahimtoola.—Will you tell us exactly why the departmental working has proved more costly? According to common notion, departmental working is always cheaper.

Mr. McKerrow.—The Paper Mills which are far away are not in a position nor are their men trained to manage grass fields, whereas contractors living on the spot and having their own men manage the fields better and cheaper.

Mr. Rahimtoola.—Have you a certain amount of control over them?

Mr. McKerrow.—We inspect and pass the grass when it is delivered at the mills.

Mr. Boag.—I should like to be certain that I understood you correctly in this matter. Are your answers to Questions 2, 3 and 6, all expressed in terms of bone dry pulp?

Mr. Wood.—Yes. I think that we forgot rags, hemp and the waste paper that we normally consume which would reduce our requirements of imported wood pulp.

President.—What percentage would you allow?

Mr. Wood.—6 per cent.

President.—That is to say 6 per cent. covers all the other materials too.

Mr. Wood.—6 per cent. for waste paper only.

President.—What about rags and so on?

Mr. Wood.—They are shewn on Form No. III. The capacity of our mills is 20,800 tons of paper. Off that we take 10 per cent. which is the clay content. It brings down the figure to 18,720 tons. From that we take the waste paper which is 1,200 tons and it brings down the paper to be obtained from other pulps to 17,520. We give our pulp capacity of the mills as 10,500 tons, bone dry which is equal to 11,550 tons air dry. By next spring by the time our new plant is started, that will be another 4,000 tons, making it in all 15,550 tons. We require altogether 20,612 tons of manufactured pulp to make the 17,520 tons of paper so that there is a gap of 5,062 tons of pulp to be bridged. That means we would require 5,000 tons wood pulp not 8,000 tons as previously stated this morning.

President.—Would it be possible to meet any part of that by increased uses of rags, hemp, etc.

Mr. Wood.—Not to any great extent.

President.—That is negligible?

Mr. Wood.—Yes.

Mr. Boag.—With regard to your supplies of bamboo, you took this lease in 1928.

Mr. McKerrow.—Yes.

Mr. Boag.—For what period? What are the terms of the lease?

Mr. Officer.—For 30 years.

Mr. Boag.—On condition that you pay the royalties which you specify on page 9.

Mr. Officer.—Yes.

Mr. Boag.—Have you seen Mr. Nicholson's report on this area?

Mr. Officer.—Yes.

Mr. Boag.—He estimates the annual supply of bamboo at 100,000 tons a year. Possibly that covers a larger area than you have taken lease of.

Mr. Officer.—Yes.

President.—The area that you have taken according to Mr. Nicholson's survey ought to yield about 80,000 tons.

Mr. Officer.—No. The blocks covered by the lease do not comprise the whole of the Angul Division but the blocks which have been leased to us according to Mr. Nicholson's survey are capable of giving us 22,900 tons per annum. He has based his estimate on a seven year rotation and has taken 450 culms per ton of air dry bamboo. In actual practice we find that 340 culms are the equivalent of one ton which puts up his estimated yield to 30,390 tons.

President.—That is taking the weight of stems on your basis.

Mr. Officer.—Yes, on our basis, which we find in practice to be correct.

President.—The rotation being 7 years?

Mr. Officer.—Yes.

Mr. Boag.—Do you work on that basis?

Mr. Officer.—We are actually working on a four year rotation.

Mr. Boag.—You have actually worked this area for nearly one year?

Mr. Officer.—Yes, but not to a substantial extent.

Mr. Boag.—Last year you worked 7,000 tons?

Mr. Officer.—We worked to the extent of 7,000 tons to tide us over the period when the extraction of bamboos was not possible.

Mr. Boag.—What are your plans for working the area this year?

Mr. Officer.—So far we are arranging to work 7,000 tons.

President.—You buy the rest of the bamboo that you require locally?

Mr. Officer.—Yes.

Mr. Boag.—What proportion did you buy locally?

Mr. Officer.—Probably 4,000 to 5,000 tons.

Mr. Boag.—As far as you have seen from the working of this forest in Bihar and Orissa are you confident that it will supply the quantity of bamboo which you anticipated when you took the lease?

Mr. McKerrow.—Yes. We believe that the species of bamboo there is not liable to flower at any rate not gregariously.

Mr. Boag.—You don't think you will have any difficulty in getting the supplies you require even if the scheme for your pulp mill is carried into effect?

Mr. McKerrow.—The areas round about will give us the balance if this area proves inadequate.

Mr. Barbour.—That is a point we have got to be very careful about.

President.—Coming to your replies to question 11, I take it your position is that the comparative delay which has occurred as far as you are concerned in the development of bamboo is to be traced partly to the fact that as the industry was placed in 1925 it was difficult for it to provide the necessary finance for adequate development, and then in addition to that there were also difficulties presented by the problem of arranging a suitable method of mechanical treatment for bamboo. In your case there was also the question of adapting your process from the overhead to fractional and then it was necessary for you at the same time to work your paper plant to its full capacity while necessary re-organizations were taking place with the result that the re-organization was held up, at any rate it did not proceed as rapidly as it might have. And the reason for working the paper plant to its full capacity while experiments were going on was that unless you did that it would not have been possible to place the industry on a basis sufficiently profitable to undertake any development. The last ground which I gather is probably the most important from your point of view is that you were concerned to a very large extent with the problem of improving the efficiency of the paper part of your mill in order that you might be able to meet sufficiently the criticisms which were made by the Tariff Board in regard to the qualities of paper and methods of production, the implication being that unless it was possible to develop in

the country a really efficient and well established paper industry, there would be no potential market for bamboo. The question of difficulties which have occurred in the mechanical field, that question in your case is not essentially different from the difficulties which have occurred in the India Paper Pulp Company's mill at Naihati. The difficulties are more or less of the same character. But as far as the digestion process is concerned, I understand that the particular kind of process which you have now decided to adopt is not the overhead, and not precisely the fractional method which is associated with Mr. Raitt's name, but a process which you call the cascade process. I would like to be a little more clear in my own mind as to what precisely this process is. The overhead process is a process in which the whole boiling takes place in the initial stage and it is completed in that stage. Is that right?

Mr. Sen.—Yes.

President.—And the difficulty about that process is that if you apply it to a material like bamboo the discolouring material is not removed sufficiently and there may be difficulties with regard to bleaching and there might be various other incidental expenses. Therefore, on this ground Mr. Raitt has been advocating the use of the fractional digestion method for bamboo. The precise point about fractional digestion, as Mr. Raitt has worked it out, is that the boiling is done in two or three separate stages, each stage being so designed as to remove particular groups of superfluous or unnecessary material from bamboo. Bamboo consists of certain groups of materials besides cellulose and some of them are more easily soluble than others. The more easily soluble ones are removed at low pressure and the others at high pressure, the two things being done in two different stages. That is the principle behind the method?

Mr. Sen.—His process is that the extraction should be made in sharply defined stages.

President.—I am coming to that. We were at Dehra Dun and we examined the experimental plant which Mr. Raitt was working. What we found there was that there were two digesters and the boiling was done in both digesters. You put all your stuff into one digester and at the same time you fill the other digester also. The liquor which you obtain in the first digester after the second boiling is conveyed to the second digester to do the first boiling. As regards the liquor that you get after the first boiling in the first digester, there would be no soda recovery; it will just be drained away. That is the process in Mr. Raitt's experimental plant.

Mr. Sen.—Yes.

President.—Without considering for the moment the precise characteristics of your process, what we gathered at Dehra Dun was that Mr. Raitt's fractional digestion process was a process that involved a certain number of digestions. It might be two or it might be three or more. It meant boiling in successive stages in this sense that the whole boiling was done in each digester but that the first boiling was done with a solution which was less concentrated, the temperature and pressure being different. In that way the stages are sharply marked off from each other, and then the liquor is used to the extent that a small scale plant of that kind would permit, on the counterflow principle.

Mr. Sen.—That is right.

President.—Mr. Raitt has only two digesters and therefore the liquor that he gets after the second boiling in the first digester is used for the first boiling in the second digester which is really an application, to the extent that two digesters would permit you to do it, of the counterflow principle.

Mr. Sen.—Yes.

President.—I will now come to your process. As I understand it from your patent specification and from your explanation to us, your process involves a battery of digesters in which the boiling is done in a continuous

process in which you do not assume that at the completion of each stage of boiling certain materials are necessarily completely eliminated. The complete elimination of certain materials is not associated with particular stages of boiling. The boiling is one continuous process, but as regards all the other factors your process is simply an application in a slightly different form of Mr. Raitt's fractional digestion method.

Mr. Sen.—In the case of Mr. Raitt's fractional digestion process the stages are sharply defined. His idea is to get rid of or eliminate such materials as lignin or pectoses. He is very particular about that. His idea is that one particular stage of boiling must necessarily be associated with the complete elimination of particular materials. He must have a specific solution for a specific length of time.

President.—Apart from that there is nothing else?

Mr. Sen.—I admit that.

President.—The assumption is that each stage of boiling necessarily means the elimination of certain group of materials. After that factor is excluded there is no difference between the cascade system and the fractional digestion method?

Mr. Sen.—No.

President.—Mr. Sen, you as a distinguished chemist have heard of Ungerer's method, have you?

Mr. Sen.—Yes.

President.—Is there any difference between your method and Ungerer's method?

Mr. Sen.—Yes, in this sense that we take into consideration the reduced volume of bamboo. The volume of material decreases in each stage and therefore it gives us a chance of increasing our concentration whereas in Ungerer's method they use the same volume of liquor right through.

President.—In Ungerer's method you have got a battery of digesters and the liquor is used on the counterflow principle?

Mr. Sen.—Yes. They have got a battery of digesters like ours and the liquor is used on the counterflow principle. The only thing is that in Ungerer's battery you have a certain volume of liquor which passes through all the digesters but it does not take into consideration the concentration of caustic. He does not take into consideration the volume of the raw material, as the material is digested. Bamboo occupies much more space when you load it and gradually loses volume.

President.—That is to say, it is an inevitable difference that arises from the fact that Ungerer's method is applied to wood and your method applies to bamboo?

Mr. Sen.—Yes, and also perhaps the fact that when Ungerer made his patent the fact that density of caustic solution has got a lot to do with the isolation of cellulose was not known.

President.—How long ago was it patented?

Mr. Sen.—About 30 or 40 years ago I think. Another difference in Ungerer's method is in the wash. When you finish digestion the wash is utilised for making caustic whereas in our case we utilise the wash as a make-up liquor for the first or second or the third digestion.

President.—You mean that your wash is used for subsequent boiling?

Mr. Sen.—Yes.

President.—In his case it was used for soda recovery?

Mr. Sen.—Yes.

President.—But these are matters of detail.

Mr. Sen.—Yes. The main difference is that he does not take into consideration the volume of the material.

President.—As far as we here are concerned I suppose we are justified, really speaking, in considering that the big difference is between the overhead

on the one hand and all these subtle refinements of the fractional digestion on the other except this principle of washing by stages.

Mr. Sen.—Or you may call it in our case the virgin liquor meeting first the almost completely washed material, the polluted liquor leaving the system at the point where the fresh unwashed material enters.

President.—Has there been any legal difficulty in connection with your patent?

Mr. Sen.—We had legal difficulty with the English patent. Mr. Raitt opposed our patent on his behalf but we have won the case and we have got it registered in England.

President.—The precise ground on which the distinction was accepted by the Courts was the point that you mentioned, namely, Mr. Raitt's assumption that particular stages of boiling imply removal of particular groups of materials?

Mr. Sen.—The main point is that and another point is this: Mr. Raitt has got two stages—he had three in the beginning—and then he thought the first and second stages could be combined. In our case we say it is not necessary to divide it into two stages. As a matter of fact we wanted to make it a continuous process. Owing to mechanical difficulties we could not do it, but our aim is that. When we finish our digestion in the 3rd stage, we blow our liquor to the next but one digester in operative sequence. That is one of the points which the Controller has taken into account. In the fractional system times vary for the different stages and there must be lack of continuity. In our case the number of steps is not vital but the treatments are all of the same length of time to obtain synchronism.

President.—I think the position is fairly clear. I should like to put on record the precise way in which the mechanical treatment of bamboo is being carried out in your mill. Does your bamboo come in split?

Mr. Bookless.—Some of it comes in split; some of it whole.

President.—Before you put the bamboo into the crusher, do you split it?

Mr. Bookless.—Not the strictus.

President.—They go in without being split?

Mr. Bookless.—Yes.

President.—If you take the muli type some of it is split.

Mr. Bookless.—At present we don't use muli. We have never used it in large quantities.

President.—What is the other type?

Mr. Bookless.—Daba. That is the one we split.

President.—Partly?

Mr. Bookless.—Yes.

President.—Do you soak it before you put it into the crusher?

Mr. Bookless.—No.

President.—It goes straight into the crusher.

Mr. Bookless.—Yes.

President.—How many pairs of rolls have you?

Mr. Bookless.—Four.

President.—Each having surface arrangements different from one another.

Mr. Bookless.—Yes.

President.—When the thing has been crushed by these 4 pairs of rolls, do you cut them?

Mr. Bookless.—It passes from the rolls through a chipping machine.

President.—You chip and you don't cut.

Mr. Bookless.—We chip into small pieces.

President.—When it is chipped is there any cleaning process before it is passed into the digester?

Mr. Bookless.—Not at present.

President.—The chipped bamboo goes straight into the digester.

Mr. Bookless.—Yes.

President.—Do you find chipping to be of any real advantage?

Mr. Bookless.—Yes.

President.—Is this the process that you have arrived at as the result of your various experiments?

Mr. Bookless.—The crushing and chipping, yes.

President.—You believe in combining crushing and chipping.

Mr. Bookless.—Yes. We have two chippers similar to those used on the Continent for chipping ordinary wood for making wood pulp. Our method of chipping is quite different from those; we tried them out here and they were not successful.

President.—That is to say, the wood chipper that you tried was not suitable for bamboo?

Mr. Bookless.—No.

President.—What precisely was that due to?

Mr. Bookless.—It would not stand up to the work. The bamboo was too springy to be cut in regular small chips.

President.—You have devised a special form of chipper?

Mr. Bookless.—Yes, we have two kinds of chippers, the Wood chipper and Bertrams Bamboo chipper.

President.—That is to say, when the bamboo has passed through the crushing rolls, does it pass through two chippers?

Mr. Bookless.—The whole of that which passes through the crusher has to be dealt with by one chipper.

President.—Have you ever tried to feed your digesters with bamboo crushed and not chipped?

Mr. Bookless.—Yes, but not on a big scale.

President.—You have not tried it on a sufficiently big scale?

Mr. Bookless.—No. From our present crusher the bamboos would come out in such large pieces that it would affect the capacity of the digesters to something like 30 per cent.

President.—What I am trying to get at is this. I quite understand that if you put your crushed bamboo straight into the digesters, then probably it might take twice the room that chipped bamboo might take.

Mr. Bookless.—Yes.

President.—If instead of chipping you cut the bamboo, wouldn't you be able to get from the point of view of your digester much the same results?

Mr. Bookless.—We chip our bamboo into small chips of about one inch long.

President.—I saw some of your chips of about that length.

Mr. Bookless.—That is right.

President.—Much thinner than my finger. That is the kind of chipping I have seen in the case of one other mill where they are using this chipping process and I gathered from conversations that the chips are not particularly different from the kind of chips that you would get out of wood.

Mr. Bookless.—Our experience of the wood chipper has been different and this experience has been over a fair quantity of, I should say something like, 600 tons of bamboo.

President.—That is not a very important point. I should have thought that when you chip and cut the thing into very small pieces of that kind, there would be a rather considerable loss due to pulverising. After all when you cut a thing like that into very very small pieces there must be a considerable amount of loss resulting from pulverising which you would avoid if

you made the pieces that went into the digester not sufficiently large to take up much room and at the same time not too small so as to avoid the loss resulting from pulverising.

Mr. Bookless.—Quite so, but I don't think there is so much loss from pulverising.

President.—I am trying to understand the mechanical treatment with reference to the yield figures that you have given.

Mr. Bookless.—I don't think pulverisation occurs to any great extent. We have not taken the percentages out. We can easily do that and give it to you.

President.—Are you able to get your nodes properly chipped?

Mr. Bookless.—It does not really matter if the chipper strikes them, because they are opened out in the crusher. It is not essential that the chipping should go through the nodes. It is all opened out in the crushing.

President.—If you do the crushing preliminary to chipping, then the nodes are shattered?

Mr. Bookless.—They are smashed. Chipping may occur on either side of the nodes and these will still be opened out.

President.—All the opening out of the bamboo takes place in the crusher?

Mr. Bookless.—Yes.

President.—So that the question of the digester liquor penetrating the bamboo material is settled in the crushing rolls.

Mr. Bookless.—Yes.

President.—You don't think that it is necessary to have any process in addition to crushing in order to get your bamboo opened out sufficiently for the penetration of the liquor?

Mr. Bookless.—No, but at the same time we don't think that we are crushing to the extent that may be most beneficial. There is a possibility that with more crushing we may be able to reduce our percentage of caustic in cooking.

President.—That is to say, hereafter the developments would lie in the direction of more crushing?

Mr. Bookless.—Yes.

President.—Not in the direction of some form of mechanical treatment other than crushing or chipping but by doing more crushing. That is how you are going to progress?

Mr. Bookless.—We think we should get a slight advantage by crushing more.

President.—You are more or less in the experimental stage as regards the mechanical treatment of bamboo.

Mr. Bookless.—Yes.

President.—You don't feel confident yet?

Mr. Bookless.—We are not confident that the mechanical treatment is fully developed.

President.—You think there is still room for development?

Mr. Bookless.—Yes, and we feel that we are far away from finality.

President.—I should like to turn at this stage to your replies to the supplementary questionnaire. This comparative statement that has been sent in regarding the cost of grass pulp in 1930-31 as compared with 1924-25, gives the improvement which has taken place since 1925 in terms of money. I should like for purposes of effective comparison to get the improvement in terms of quantities consumed. Taking first the yield of pulp from grass on an air dry basis it was 48.3 per cent. in 1924-25 and 45.1 now. As far as that is concerned there has been a deterioration.

Mr. Wood.—It would appear so.

President.—That is to say, the way in which you make out your figures really represents the realities of the situation.

Mr. Wood.—Yes, at this stage.

President.—I am not in a position at all to judge how far from your figures I can get a more reliable result than this. I want to put the point to you in this form whether there has been any improvement in pulp yield from grass since 1925 or not. That is a matter on which the burden of proof rests entirely upon you and as your figures stand in this statement I am entitled to conclude that there has been some deterioration. If you think that the deterioration as shown by the figures is apparent and not real, the burden of proof is on you.

Mr. Wood.—I would answer that question by saying how our yield has been reduced since that time and what led to it, and the conditions under which we were working in 1924-25 when we were experimenting on what we call the cycle process which was more or less a fractional method. At that time we found that the pulp yield was better, but the paper yield did not reflect this and we had other drawbacks, our recovery was much lower and the capacity of the digesters was reduced to two-thirds.

President.—Are the results better in 1926-27?

Mr. Wood.—I could not tell you definitely.

President.—Give me the very best year between 1924-25 and 1930-31 with the same process.

Mr. Wood.—Yes.

President.—That would clear up the matter.

Mr. Wood.—Yes.

President.—I leave that point at present at that, because you have promised to give me a statement showing the pulp yield over a period of years.

Mr. Wood.—Yes.

President.—You were using Mr. Raitt's soda process?

Mr. Sen.—Yes.

President.—What is your consumption of caustic calculated on the percentage of air dry weight of grass?

Mr. Wood.—14.23 per cent. in 1930-31.

President.—Could you give me the corresponding figure for 1924-25?

Mr. Wood.—12.87 per cent. of air dry weight.

President.—Is it possible for you to find any year in which better results are shown?

Mr. Wood.—In what respect? You mean in caustic consumption?

President.—Yes. That is to say, if it was 12 and something in 1924-25, it is now 14 and something.

Mr. Wood.—In those days we could get only 38 per cent. recovery against 50 per cent. to-day. The total caustic used was considerably less in 1924-25 and the liquors sent to the recovery plant were much lower in caustic content.

President.—I find the position very puzzling.

Mr. Wood.—Yes.

President.—Whatever test I take, although I am anxious to do so, I find it impossible to convince myself that things are anything like what they ought to be.

Mr. Wood.—Of the 12.87 per cent. caustic used in 1924-25, we recovered 38 per cent. Of the 14.23 caustic used in 1930-31 we recovered 52 per cent.

President.—That is perfectly true. But I would not stress your soda recovery percentage. Although 51 per cent. is better than 38 per cent., it is a long long way from what you ought to get with a decent soda recovery plant. There is enormous wastage going on somewhere.

Mr. Wood.—Yes, because our present plant is unable to deal with the quantity that it is required to handle. That is why we are having the renovations. It is not because the plant is inefficient, but because the plant is overloaded. After all we have got to study the finished cost figure which as you will see has improved.

President.—The finished cost in terms of money has been improved for you by world conditions for which you are not responsible.

Mr. Wood.—Yes, partly.

President.—Coal has come down; chemicals have come down and grass has come down. The only real test that can be applied is to eliminate all the various changes that have taken place in monetary factors and reduce the thing to a basis of consumption; that is the only way in which efficiency can be tested. It is no use your saying that your grass has come down or chemicals have come down. Your case cannot be proved on that basis nor on the basis of the final cost of paper, which only reflects the fall in the prices of these things. Can you give me your coal consumption?

Mr. Wood.—You mean to-day's?

President.—I want your consumption figures per ton of pulp for 1924-25 and 1930-31.

Mr. Wood.—We cannot give you for 1924-25 without looking up the records, but I can give you for 1930-31. I have the figure in terms of coal representing the cost of our power, which includes the labour (shewn).

President.—Omitting the conversion cost?

Mr. Wood.—Yes, and our present coal consumption works out at 1.830 ton per ton of pulp and includes what is required for soda recovery and causticising.

President.—That is the cost of coal?

Mr. Wood.—No, the quantity of coal.

President.—Required per ton of pulp including the work done on the recovery of caustic?

Mr. Wood.—Yes.

President.—Does it include the expenditure on the electrolytic plant? take it that it includes the expenditure of coal on yield of pulp.

Mr. Wood.—No, that comes under chemicals. If we had not that, we would have to purchase chemicals to make up for it.

President.—The only extra thing that it does is causticising.

Mr. Wood.—Yes.

President.—That is slack coal?

Mr. Wood.—Yes.

President.—Can you give me an equivalent figure for 1924-25?

Mr. Wood.—Not now, but I can work it out for you.

President.—Have you got any figures?

Mr. Wood.—I have got the same figures for 1924-25.

President.—What is the quantity that you have?

Mr. Wood.—Not on this basis.

President.—Can you work it out?

Mr. Wood.—I can.

President.—Give me the quantity of coal consumption per ton of pulp in 1924-25 including causticising and you would give that I take it in terms of Jheria 1st class?

Mr. Wood.—On the quality of coal we used at that time.

President.—That was Jheria, was it not?

Mr. Wood.—I am not certain.

President.—I think it is Jheria 1st.

Mr. Wood.—That is very much more expensive.

President.—The difference between Jheria 1st class and slack coal now is how much?

Mr. Wood.—That will be about Rs. 4-8.

President.—Taking the kind of coal used in 1924-25 which is really 1st class steam coal and slack coal, what is the difference delivered at your mill?

Mr. Wood.—At present day prices?

President.—Taking present prices.

Mr. McKerrow.—Our present prices for Raneegunj slack coal are anything between Rs. 2-2 and Rs. 2-6 pitsmouth.

President.—Delivered at Titaghur?

Mr. Wood.—Rs. 5-14.

President.—What would be the corresponding price delivered at the mill of 1st class steam coal?

Mr. McKerrow.—Rs. 4.

President.—That would mean a difference of Rs. 2. The price of Rs. 4 is at the pit's mouth, is it not?

Mr. McKerrow.—Yes. If you take Raneegunge on the same basis, it would be Re. 1-10.

President.—The corresponding cost delivered at the mill is Rs. 7-8.

Mr. McKerrow.—Yes.

President.—Can you give me the consumption of bleach per ton of unbleached pulp?

Mr. Wood.—Which kind of pulp?

President.—Unbleached grass pulp.

Mr. Wood.—15 per cent.

President.—That is taking the bleach at 35 per cent. chlorine?

Mr. Wood.—Yes.

President.—There is another complication in that: I mean the proportion of fully bleached paper to the output. That does make a certain amount of difference.

Mr. Wood.—It does.

President.—That is to say, if your output is 70 per cent. fully bleached and 30 per cent. unbleached and somebody else's 50 per cent. fully bleached and 50 per cent. unbleached, the proportion of bleach in the two cases would be different.

Mr. McKerrow.—In our No. 1 Mill it is all bleached.

President.—It can be taken as fully bleached for the whole output?

Mr. Wood.—Yes.

President.—Does the 15 per cent. represent the result on No. 1 Mill?

Mr. Wood.—It does.

President.—Can you give me corresponding figures for bamboo for 1930-31?

Mr. Wood.—Practically the same figure.

President.—Is there no difference?

Mr. Wood.—No.

President.—For bamboo pulp give me figures for caustic soda, coal and bleaching powder.

Mr. Wood.—Per ton of paper from bamboo pulp? All these costs are there (shown).

President.—I am not on the question of converting pulp into paper. I am on the pulp stage. I take it that we cannot have a comparative statement for 1924-25 and 1930-31 with regard to bamboo because you never made

bamboo pulp in 1924-25. Can you give me corresponding figures for bamboo in 1930-31?

Mr. Wood.—Yes.

President.—What is the consumption of these materials per ton of unbleached pulp—bleach, coal and caustic soda? Can you give it to me?

Mr. Wood.—Not at the moment.

President.—Would you make a note of that?

Mr. Wood.—Yes.

President.—With regard to bamboo on the question of bleach, you would have to explain what the proportion of bleached and unbleached in the fibre output is. Your bamboo pulp figures would be in Kankinara?

Mr. Wood.—Yes.

President.—At Kankinara you make a considerable proportion of unbleached?

Mr. Wood.—Yes.

President.—Therefore the proportion of fully bleached, semi-bleached and unbleached at Kankinara would be different from Titaghur.

Mr. Wood.—Yes.

President.—That is a point which you would have to explain.

Mr. Bookless.—All the bamboo pulp is bleached.

President.—Of the total output, say, so much is fully bleached, so much semi-bleached and so much unbleached.

Mr. Bookless.—All the bamboo pulp is fully bleached.

President.—If all the grass pulp is fully bleached and if all the bamboo pulp is fully bleached, wherein do you make your unbleached?

Mr. Bookless.—We make the unbleached out of unbleached wood pulp and waste paper.

President.—In which mill do you make that?

Mr. Bookless.—In No. 2 Mill.

President.—Can you eliminate the bleach consumption on No. 2 Mill because you make a certain amount of paper which is not fully bleached?

Mr. Wood.—Yes.

President.—Therefore the position in No. 2 Mill in that respect is different from the position in No. 1 Mill?

Mr. Wood.—Very much so.

President.—Therefore the proportion of bleach that you use in No. 2 Mill would be correspondingly less than in No. 1.

Mr. Bookless.—You mean to the total production of the mill?

President.—Assume there is no material difference between No. 1 and No. 2. Assume both are using bamboo and No. 2 is making 50 per cent. fully bleached and No. 1 is making 100 per cent. fully bleached. Obviously the proportion of bleach that you use in one is less than in the other?

Mr. Bookless.—Certainly on the total, but not on the 50 per cent. that is bleached.

President.—No. You can only do it on the whole output. You divide it over the whole output.

Mr. Bookless.—Then, it would be less.

President.—I am sorry to trouble you for further statements, but it is rather important. You have probably heard the suggestion which I have made to the India Paper Pulp Company yesterday. We want to try if possible to present a complete picture of the developments which have taken place in the mills. The obvious way in the case of an ordinary industry is to take the output for two years and costs and compare them. In this particular case, that comparison of yield is not possible because the variation in the quantity of imported pulp makes the comparison less valuable than it

might be. Therefore we want to eliminate that altogether. That is the reason why I have asked for figures of costs and consumption in regard to grass pulp in 1924-25 and 1930-31. I am now going to ask you to give me a comparative statement for 1924-25 and 1930-31 in regard to the costs of converting unbleached pulp into paper. Can you do that?

Mr. Wood.—Yes. As a matter of fact we have a rough statement made up according to our own ideas. I do not know how far it would fit in with what you have in mind. This is per ton of finished paper (shewn).

President.—It includes the cost of the primary material?

Mr. Wood.—Yes.

President.—Cut out the primary raw material.

Mr. Wood.—(Showed the statement and explained.)

President.—Can't you cut out the pulp?

Mr. Wood.—Yes.

President.—Cut out the pulp. Take one ton of unbleached pulp and tell me how much it costs you under various heads to convert one ton of unbleached pulp into the equivalent quantity of fully bleached paper?

Mr. Wood.—That is just the statement you want.

President.—No, I want it in a slightly different form. What you have given is the cost of conversion to one ton of paper.

Mr. Wood.—Yes, from grass pulp.

President.—You cut out the grass pulp and give me the other costs not per ton of finished paper but per ton of unbleached pulp.

Mr. Wood.—Yes.

Mr. Rahimtoola.—In your answer to Question 11, you have dealt exhaustively with the exploratory work which you have done in connection with bamboo. You have also pointed out the difficulties in not being able to take up the work in hand immediately after the Protection Act was passed.

Mr. McKerrow.—Yes.

Mr. Rahimtoola.—You are aware of the reasons for the grant of protection, viz., to find out all possible avenues regarding the future of bamboo for the Paper industry. You have pointed out that owing to lack of funds and owing to the adverse criticism of the Tariff Board in their Report of 1925 you have devoted all your attention except for a year or two before to the question of making paper. You found the wood pulp as a very handy material which came to your assistance in this plan?

Mr. McKerrow.—We have been using grass also.

Mr. Rahimtoola.—You have pointed out in this note that wood pulp came in as a handy material in order to build up your paper industry. You have also pointed out the difficulties that you experienced regarding the best method to deal with bamboo and you ultimately decided to have your own process known as the cascade process.

Mr. Sen.—Yes.

Mr. Rahimtoola.—I would like to know whether you have taken any assistance from the people of the Forest Institute in this matter?

Mr. McKerrow.—I believe we have.

Mr. Sen.—We have taken some advantage of the Institute. We first of all wanted to try their process and I went to Dehra Dun and we occasionally sent bamboos there to have them tried by their method of fractional digestion and also tried their method at our mills according to their instructions. But ultimately we thought we could improve upon the process and the result of our experiments is this cascade process.

Mr. Rahimtoola.—Therefore you have come to the conclusion after having fully tried the fractional digestion process that your process is the better one and obtains still better pulp.

Mr. Sen.—Yes, under the conditions in which we are working.

Mr. Rahimtoola.—Do I understand that your cascade system is still in an experimental stage?

Mr. McKerrow.—To a certain extent it is.

Mr. Rahimtoola.—But you gave one an impression that the cascade system had been tried out?

Mr. McKerrow.—Yes, but I may point out that if later on we do find that the other system is more successful our existing plant could be turned over to that.

Mr. Rahimtoola.—That means that the other process has not been fully tried out?

Mr. McKerrow.—We will try the cascade for another year or two.

Mr. Rahimtoola.—That means that you are not fully satisfied in your mind that the process has been fully tried yet?

Mr. McKerrow.—I am not satisfied in my own mind.

Mr. Rahimtoola.—Can you substantiate the statement you make in answer to Question 11 which is as follows:—“ We find that bamboo pulp of our own manufacture is superior for most of our purposes to the ordinary qualities of easy bleaching sulphite wood pulp which we are in the habit of importing ”.

Mr. Bookless.—I think I can confirm our statement that our own bamboo pulp is better.

Mr. Rahimtoola.—And you also say “ It is cleaner, free from resins and bleaches to a high white colour ”. In your opinion bamboo pulp is superior in these respects?

Mr. Bookless.—Yes.

Mr. Rahimtoola.—Your experience as far as pulp making at Kankinara is concerned is only just over a year inspite of the fact that protection was granted five years ago.

Mr. McKerrow.—We are still in an experimental stage.

Mr. Barbour.—Experiments in which we have spent several lakhs of rupees, not merely laboratory experiments.

Mr. Rahimtoola.—I take it you attach a great deal of importance to the pulp mill which you intend putting up at Cuttack?

Mr. Barbour.—We do.

Mr. Rahimtoola.—I take it therefore that in this five year period you have been in touch with the Dehra Dun people and they have offered you free of charge all the assistance that you required in connection with the pulp industry?

Mr. Barbour.—That is so.

Mr. Rahimtoola.—Coming now to the question of crushing your bamboo you state, “ We were, of course, aware of the features of the machine in use at Naihati but our object was to secure a crusher which would satisfactorily deal with each and every kind of bamboo and to attain that end we have spared neither time nor trouble in the carrying out of one alteration or another and in experiments with several types and arrangements of rolls ”. Do I understand that you have tried many qualities of bamboo in that crusher and you have got entire satisfaction?

Mr. Bookless.—No, we have not; we still think that we can improve on it.

Mr. Rahimtoola.—Therefore your crusher has not proved entirely satisfactory?

Mr. Bookless.—No.

President.—All the improvements will be in the direction of providing new rolls?

Mr. Bookless.—It is very difficult to say. I am afraid crushing is in an experimental stage even to-day.

Mr. Sen.—Probably we may have to change the cover of the rolls.

Mr. Barbour.—We have co-operated with other mills on this crusher question and they are going to reciprocate.

Mr. Rahimtoola.—You say you are fully aware of the crusher used in Naihati; may I know where the difference lies?

Mr. Bookless.—There are more rolls in it and it is heavier. The grooving of the rolls is different from ours and then of course they usually treat lighter bamboo than we do, the *muli* bamboo they use being very thin.

Mr. Rahimtoola.—You state that you have satisfied yourselves that bamboo can take the place of imported wood pulp in most classes of paper but there are certain classes of paper for which bamboo will not be suitable. What are they?

Mr. Bookless.—That is strong ledger and other high class papers made out of rags and wood pulp. I don't think we will get the strength out of bamboo only.

Mr. Rahimtoola.—Do I understand that in these papers you would require a certain amount of mixture?

Mr. Bookless.—Yes.

Mr. Rahimtoola.—In the works costs of grass that you have given, repairs and maintenance show as 5·474 per ton of grass pulp on the bone dry basis as against 10·404.

Mr. Wood.—Yes.

Mr. Rahimtoola.—And you have tried to explain it away by saying that it was due to incurring extra expenditure on repairs. It is practically double?

Mr. Wood.—It was extensive repair which meant practically renewing the digesters.

President.—The point there really is that repairs and maintenance occur only periodically but wear and tear occur year by year so the costs must be debited to each year equally.

Mr. Wood.—These were actual costs in that year.

Mr. Boag.—I would like to ask a question about the last paragraph on page 19 of your representation. You say "The use of sulphate would reduce the cost of chemicals per ton of pulp still further" but you have not been able to use it on account of the smell. Could you explain shortly exactly how the use of sulphate would effect this reduction in cost?

Mr. Sen.—If we could use sodium sulphate which is only Rs. 60 per ton in place of drum caustic at Rs. 240 per ton there would be an obvious saving. We find, as far as our experience goes, that 25 per cent. of sulphide and 75 per cent. caustic would give us easy bleaching pulp.

President.—The two together constitute the same percentage as before on the raw material?

Mr. Sen.—Exactly. It all depends on whether sulphide is going to replace all our caustic or a portion of it according to our recovery. If we can recover 75 per cent. then we would not have to use any caustic at all.

President.—To the extent you are enabled to get your required proportion of caustic from your recovery plant, to that extent you can go on using sodium sulphate in its place and cheapening the cost?

Mr. Sen.—Yes. Rs. 60 a ton again Rs. 240. We can go up to 33 per cent. of sodium sulphide and we have found that 33 per cent. gives a very good result.

President.—It gives you a better quality?

Mr. Bookless.—We are not very definite about that.

Mr. Sen.—We consider that it improves the yield.

Mr. Boag.—What do you consider would be the scale sufficiently large to justify the installation of a deodorizing plant?

Mr. Sen.—I am not definite about that but I think 30 tons of pulp a day would be sufficient.

Mr. Boag.—On page 21 you say that you have ordered 4½ ton digesters of the Sinclair type. What is the capacity of your present digester?

Mr. Sen.—Each 3 tons of bamboo.

Mr. Barbour.—Before adjourning may I be allowed to refer back to this question of efficiency. May I point out that all our grass paper is made in No. 1 Mill where the consumption of grass has gone up 50 per cent. and yet our quality has improved 100 per cent. The point I wish to make clear is that it is not due to the use of wood pulp that our quality has improved. Then again it is very difficult to assess the improvement in quality but an improvement has undoubtedly taken place. Some of the credit for this must surely be attributed to increased efficiency and not at all to the consumption of wood pulp.

President.—*Question 13.*—In that statement which I asked for regarding the cost of converting unbleached pulp into paper, I should like you to make an estimate on these lines. In answer to Question 13, the reasons for increasing the quantity of imported pulp are discussed. Now the allegation has been made that the use of imported pulp has meant the withdrawal so to speak from this country of a large amount of potential expenditure which would have been incurred if instead of the imported pulp indigenous pulp had been used. I should like you to make an estimate of the expenditure incurred in connection with the conversion of imported pulp into paper which you have incurred in your works. I presume all that expenditure means outlay of money in this country. The only deduction which has to be made is in respect of imported auxiliary materials if there are any from the unbleached to the paper. Therefore in the statement that you are going to make showing the comparison of costs, you might also give me a statement showing what the additional expenditure in this country has been in the conversion of imported pulp excluding the expenditure on imported auxiliary materials.

Mr. Wood.—Yes.

President.—In answer to Question 14 you say “We should eventually need only a very small quantity of imported wood pulp, not more than about 100 tons a month at each mill”. I take it that means in the two mills together you would be using eventually 200 tons of imported pulp, is that right?

Mr. Wood.—Yes.

President.—2,400 tons a year.

Mr. McKerrow.—Not more than that.

President.—That represents about 10 to 15 per cent. of your total output.

Mr. McKerrow.—Yes.

President.—Even if you were in a position to increase your pulp capacity of the No. 2 Mill beyond the capacity of the extensions, even if you did that, it would be necessary for you to use 15 to 20 per cent. of imported pulp.

Mr. McKerrow.—Yes, for a certain amount of special papers.

President.—There are certain special class of paper for the manufacture of which in any case you would require certain quantity of wood pulp which would not exceed 10 to 15 per cent. of the output.

Mr. McKerrow.—That is correct.

President.—There is a point in connection with that which I want to get cleared up. I take it that there is a certain portion of the market for which you can cater only if paper is made in the main of grass. That is to say, there are certain classes of paper which have got to possess a certain degree of strength, of bulk and durability and so on for the predominant composition of which grass furnish is required.

Mr. Bellamy.—A section of the market definitely prefers grass paper, but it does not mean that it is necessary that that section should be supplied with grass paper. If there were no grass paper, they would be equally satisfied with bamboo or wood paper. But while grass paper exists it prefers the grass paper.

President.—Does that mean this, that the market now has got so used to those classes of paper made from grass that it would take sometime before bamboo paper will be able to replace that? There is a certain preference which long usage has established in the market for grass paper?

Mr. Bellamy.—Yes.

President.—Now that preference is the result of long usage. If that really is in the last resort a matter of prejudice in favour of grass paper and bamboo paper could be placed sufficiently long in the market, it is not impossible that that prejudice would be removed.

Mr. Bellamy.—I would hardly call it a prejudice. I would call it a preference.

President.—That is simply a verbal distinction. Prejudice in favour of an article is preference.

Mr. Bellamy.—They like it, because it is a better quality paper. It is a strong paper. When you make a printing paper out of grass, it is suitable also for writing paper unlike most of the wood pulp papers. Therefore it is a paper of general utility and in this country where price considerations count so much, where paper could be used by the small printer according to the demand of the moment, he likes the grass paper better than the wood pulp paper.

President.—Assuming it is possible after providing for a sufficiently long interval for bamboo to cater for that portion of the market, then it would mean that leaving out a very small portion of the market, bamboo could probably produce all the paper which the Indian market requires.

Mr. Bellamy.—It undoubtedly could.

President.—If you take your present output of 19,000 tons of paper ultimately how much of that output would be made entirely from bamboo?

Mr. Bellamy.—Of the present total output?

President.—Yes. Your present total output is over 19,000 tons. A certain portion of that output represents special classes of paper.

Mr. Bellamy.—Yes.

President.—The other represents classes of paper which could be made equally from grass or bamboo.

Mr. Bellamy.—Yes.

President.—Suppose bamboo has been sufficiently long in the market for the customer to get used to it, then what is ultimately the total proportion of your present output which could be made entirely from bamboo paper?

Mr. Bellamy.—So far as our experience goes eventually we should be able to make the whole of our production from bamboo but there are one or two qualities which we are not quite sure of. It is in respect of those one or two qualities for which we would require a minimum quantity of wood pulp. From what I have seen and the way in which the market has taken to bamboo papers, eventually we should be able to make every kind of paper in general use from bamboo.

President.—Barring about 10 to 15 per cent. at the most everything else could be made out of bamboo.

Mr. Bellamy.—Yes. That is the kinds of papers in general use, I mean the ordinary kinds of paper, not the superior writing papers which are usually made from rag.

President.—If cost were no consideration, could the same thing be said with regard to grass? Suppose it were possible to make as large a quantity of grass paper as you might want, leaving out the question of cost, would it be possible for your grass paper to take the place of the whole of your output now barring that 10 per cent.?

Mr. Bellamy.—Not quite the whole of our output, because there are certain grades of paper where softness is required which grass will not produce. The grass produces a hard paper.

President.—So that am I right in thinking that looking at the question from the point of view of the future development of the Indian paper industry, there is a much greater possibility of the Indian Paper industry capturing the bulk of the Indian market with bamboo paper rather than with grass paper?

Mr. Bellamy.—I think that is correct.

President.—Therefore in the main the conclusion of the Tariff Board in 1925 is correct that apart from any question of cost the future development of the Indian Paper industry to an extent commensurate with the total market of the country is bound up largely with the development of bamboo.

Mr. Bellamy.—That is so. But at the same time it is our experience—although we have not tried it out on a large scale, that a mixture of the two fibres, bamboo and grass would produce the best paper. Bamboo will probably be the predominant fibre, but a mixture of the two will produce the best results.

President.—In Question 15 you discuss a matter which has caused me and my colleagues very considerable difficulty. We are anxious to make up our minds as definitely as possible with regard to the question of a probable shortage of wood supply. In 1925 the Board thought that there was going to be a shortage of wood pulp and a rise in the price of wood pulp. They, of course, were careful to say that no time limit could be fixed. Instead of prices going up, prices have come down steadily. You are still making the suggestion that taking a broad view of things a shortage of wood supply is inevitable at sometime in the future. What I find difficult to understand in that proposition is this. If you take the important paper manufacturing countries in the world, take for example, the Scandinavian countries, as far as I understand the forests either belong to the State or belong to large Corporations like Kreuger and Toll's Pulp Company. Is it conceivable that Government or these Corporations who know what they are about would let their forest resources be exploited without at the same time providing a suitable scheme of reforestation or forest regeneration.

Mr. Barbour.—As a matter of fact the Swedish people are pre-eminent in their care of their forests. Sweden has a reforestation scheme which gives her an annual increment almost a little in excess of what she takes out of her forests, so that she will never go far short, but 60 per cent. of the paper used and manufactured in this world is used and made in North America. They are going to be short of pulp wood and they have, as a matter of fact, run short in the United States of America. The Canadian Government appointed a Royal Commission in 1924.

President.—How long ago was that?

Mr. Barbour.—In 1924. It is rather out of date. The position is also examined in recent surveys made by various people in connection with timber in Canada, Austria and elsewhere.

President.—The real danger spot according to your statement is America.

Mr. Barbour.—Yes.

President.—What I should like to get at is some kind of definite figures with regard to the pace at which exploitation is going on in American forest areas. The difficulty that occurs to me is this. After all if you are going to exploit your forests without providing for regeneration, it is like a businessman carrying on business without setting aside depreciation. That is what it amounts to. Personally I find it difficult to believe that about the United States of America or Canada. I find it a little difficult to believe that they would carry on forest exploitation without taking the ordinary precaution that any prudent businessman would take.

Mr. Barbour.—That is being done. An official bulletin published by the United States Agricultural Department says that the drain on the country's forests is four times as great as the amount of wood grown in each area.

President.—That is a statement by whom?

Mr. Barbour.—Given in the United States Agricultural Department Bulletins 886 of 1922 and 1241 of 1924. Even if they adopted the most

intensive methods of reafforestation and conservation on their present area of 470 million acres, they could only expect to grow as much as they were then using in 1924 and the consumption has gone up since then.

Mr. Rahimtoola.—Do I understand that this information was not placed before the first Tariff Board enquiry?

Mr. Barbour.—No. We have got this information from America only recently.

Mr. Rahimtoola.—It is dated 1924.

Mr. Barbour.—We only got it this year. This is the most up to date information that we could get from official sources.

President.—If the forests in the United States are being denuded as the statement would suggest, then a time will come when the requirements of America will have to be met from Scandinavian countries.

Mr. Barbour.—Yes.

President.—Then the question is that the increase in demand made in that way on the world supplies in Scandinavian countries would mean a general shortage of wood supply in the world.

Mr. Barbour.—Yes.

President.—That assumes again that in meeting the requirements of the United States of America, Scandinavia would allow her supplies to be denuded without a suitable scheme of regeneration. If that doesn't happen, that is to say, if it is possible for Scandinavia to meet the present demands made by the Scandinavian resources and in addition to that whatever requirements hereafter are made by the United States of America and at the same time Scandinavia provides a suitable scheme of regeneration, then the question of shortage may be indefinitely delayed.

Mr. Barbour.—That assumes things which are not possible.

President.—What I mean is this. If it is a well established tradition in Sweden that forests are not to be exploited except on a basis of suitable reafforestation even the additional demand that might be made by America upon Sweden would not imply exploiting forests uneconomically in Sweden.

Mr. Barbour.—The demand might be made upon Sweden but she would not be able to fulfil it. She has only enough forests for herself to go on.

President.—Therefore prices would go up.

Mr. Barbour.—Instead of using spruce, they are going in for fir because they can use the waste from the saw mills. Therefore all the latest mills put up in Sweden are Sulphate Mills. It is in the direction of a change over from sulphite to sulphate. That is the only way in which the immediate wood shortage can be met.

President.—Now spruce is treated by the sulphite process.

Mr. Barbour.—Yes, and mechanically.

President.—And silver fir would be on an alkaline basis?

Mr. Barbour.—There is rosin in it.

President.—What is the bearing of this question on wood supply?

Mr. Barbour.—That is the only way in which the country's resources can be expanded to meet the additional demand.

President.—Supposing, for example, silver fir and trees of that kind are going to be used in order to meet the shortage of spruce and silver fir is going to be treated by the alkali process, would the wood pulp that results be equally good?

Mr. Barbour.—No. It is only used at present for inferior paper. They cannot get the white colour.

President.—The assumption is that coniferous trees which are treated by the alkali process would yield an inferior kind of wood pulp. Is that correct?

Mr. Barbour.—Yes.

Mr. Rahimtoola.—When we were just adjourning for lunch you made a statement about wood pulp. I should like to know how far that statement is consistent with the statement made on page 13 of your reply where you say "As stated in our letter of 9th July, 1930, to Government wood pulp played an important part in assisting us over our difficulties". That means in order to build up your paper side of the industry you used wood pulp irrespective of any other consideration.

Mr. Barbour.—We were enabled by the use of wood pulp to keep up our productive capacity of the Kankinara mill after we had thrown the digester part of the plant out of commission. Now we have started turning over that plant. It was a long time before we actually got it working due to circumstances beyond our control. In the meantime we had to keep the mill working. The statement that I made just before adjourning for lunch was this. It was suggested that the improvement in our paper was due to the increased use of wood pulp. That might be true so far as Kankinara is concerned, but at the other mill (No. 1 Mill) our paper has improved 100 per cent. in quality, twice as good as it was a few years ago. In 1931 it contained 50 per cent. more grass than it did in 1924, so that if there is any raw material to be thanked for this improvement it is grass and not wood pulp.

President.—As far as No. 1 Mill is concerned?

Mr. Barbour.—Yes.

Mr. Rahimtoola.—As regards the Forest Research Institute, Dehra Dun, I think that you are of opinion that that Institute has proved beneficial to the industry and that its existence is necessary in the interests of the paper industry.

Mr. Barbour.—Yes, we certainly think so.

Mr. Rahimtoola.—As regards the soda process with fractional digestion, there is one point which I did not quite understand. I gather that the difference between your process and Mr. Raitt's process is that Mr. Raitt maintains that he is able to eliminate 100 per cent. of two matters which require to be eliminated, namely, starch and pectin leaving lignin for the second digestion. Your contention is that you are not in a position to find out that 100 per cent. of the two matters has been removed after the 1st digestion.

Mr. Sen.—We do not take into consideration whether they are removed or not.

Mr. Rahimtoola.—You told us that you had visited the Dehra Dun Institute yourself.

Mr. Sen.—Yes.

Mr. Rahimtoola.—I want to know what was your experience as regards Mr. Raitt's contention. Did you not investigate the fact that Mr. Raitt by his method has proved that it is possible to eliminate those two matters to the extent of 100 per cent.?

Mr. Sen.—We call this division arbitrary. The things which have been dissolved by the use of one or two per cent. of caustic are what are known as pectin and starch. Therefore according to his theory he must have eliminated something but we do not know whether it is pectin or starch. But our contention is that his division is arbitrary. In other words it is based on the solubility of constituents. What he has taken out by one or two per cent. caustic solution he terms pectin and starch.

President.—On the other hand you depend for your digestion on liquor of continually increasing concentration.

Mr. Sen.—Exactly.

Mr. Rahimtoola.—You have given us to understand that as far as cream laid, azure laid and cream wove are concerned a certain amount of wood pulp would be necessary.

Mr. Bookless.—Not absolutely. It is possible to make these things without the use of wood pulp.

Mr. Rahimtoola.—Then I do not understand the reason why Government have insisted that in these papers 30 per cent. of sulphite wood pulp should be used.

Mr. Bookless.—Government never told us why they put that in.

Mr. Rahimtoola.—You have not been able to find that out without your being told so.

Mr. Bellamy.—Probably they were under the impression at one time that perfectly clean paper could not be made without the addition of wood pulp, but now they apparently are convinced that good clean paper can be made from indigenous fibres. In last year's specification they have stated that all papers must contain a large proportion of indigenous fibres.

Mr. Rahimtoola.—That is the latest contract for 1931.

Mr. Bellamy.—Yes. No mention has been made of the wood pulp this time.

Mr. Rahimtoola.—That is to say, the manufacturers of paper have satisfied Government that wood pulp is not essential for those qualities of paper which they use and require.

Mr. Bellamy.—That would appear to be so from the change in their specification.

Mr. Rahimtoola.—In reply to Question 14 you say "The following comments by our Mill Manager and Superintendent upon the technical possibilities of bamboo are of interest in connection with the question under reply". Do I understand that you formed these opinions?

Mr. Bookless.—Yes.

Mr. Rahimtoola.—Is it your opinion that a paper mill in India can be absolutely independent of wood pulp?

Mr. Bookless.—Yes.

Mr. Rahimtoola.—Now as regards the question about the shortage of coniferous wood, you have given us to understand that in Sweden at any rate even if as a result of the shortage of wood supply in America more demands are made upon her, the Swedish people are not inclined to take the risk about shortage of wood.

Mr. Barbour.—Yes.

Mr. Rahimtoola.—Do I understand in that case that it would be necessary to find another principal raw material?

Mr. Barbour.—Yes, eventually. At present Finland is supplying timber from her capital; that is to say, she is cutting more than she is replacing. The same thing might be said of Russia. They are also living on their capital. In order to get credit outside they are cutting their forests and denuding them.

President.—What is your information about Finland? What is the source of your information?

Mr. Barbour.—Trade papers, London Times, and trade magazines.

Mr. Rahimtoola.—Is there any authority behind it?

Mr. Barbour.—It has appeared in the *Times*. A cartoon however appeared in *Punch* showing what is happening in regard to exports from Russia and is a matter of common knowledge.

Mr. Rahimtoola.—As the President has pointed out, it is very difficult to believe that such a short-sighted policy is likely to be pursued which is detrimental to their own interests.

Mr. Barbour.—As Mr. McKerrow suggests, probably they are cutting their forests and bringing those areas under cultivation.

Mr. Rahimtoola.—That is quite a different object.

Mr. Barbour.—Yes.

Mr. Rahimtoola.—Since 1928 you are not importing china clay.

Mr. Officer.—That is right.

Mr. Rahimtoola.—Are you using Kasimbazar china clay?

Mr. Officer.—Partly that, and partly from another supplier of the same district.

Mr. Rahimtoola.—Are you satisfied with the quality?

Mr. Officer.—Yes.

Mr. Rahimtoola.—Coming to your reply to Question 22 regarding Indianisation, you are already aware, I take it, of the opinion expressed by the Board in connection with the Indianisation in their Report of 1925.

Mr. McKerrow.—Yes.

Mr. Rahimtoola.—The Board was dissatisfied with the progress that has been made in Indianisation and they were also not satisfied with the reasons stated, *viz.*, that suitable men were not available or that men available would not stick to the jobs. As regards your scheme, you have said that in 1924 you started an apprenticeship scheme and that under that scheme you took 24 young men.

Mr. Officer.—From time to time.

Mr. Rahimtoola.—At the present time, the Company has only ten apprentices in their mills.

Mr. McKerrow.—Yes

Mr. Rahimtoola.—May I know what happened exactly with regard to those 24 men?

Mr. McKerrow.—May I say with regard to the question of Indianisation there is a strong tendency on the part of young Indians once they are engaged by us to expect promotion as a matter of course. This is unfair to their employers. I don't think that it is sufficiently realised by them that almost without exception the European assistants who are engaged by us are picked men from men who have already been trained. It therefore follows that the percentage of rejections of men, or men who find the work uncongenial is higher amongst locally employed men. In fact it is comparable to the British boys in Britain. It is quite natural that more local men should pass through our hands in comparison with the selected number of European assistants.

Mr. Rahimtoola.—Let me understand the point clearly. You take an Indian for a definite number of years for the apprenticeship course?

Mr. McKerrow.—That is right.

Mr. Rahimtoola.—I don't understand how he could expect a job or promotion of any sort unless he has finished his term of apprenticeship as per agreement. It is not of course unnatural to expect a job after having put in 5 years in the mill.

Mr. McKerrow.—I think I may say that those who have done 5 years are getting jobs.

Mr. Rahimtoola.—Why is it that they do not go through the period of apprenticeship?

Mr. McKerrow.—Your complaint was that so many men were enlisted but they did not stick to their jobs. They left the mills of their own accord. They either found the work hard or felt that they did not get any promotion.

Mr. Rahimtoola.—There is no question of promotion. Do they expect any promotion even before the period of 5 years was over? Is it your opinion that these people claimed to get service before the term of agreement was over or before they were fully qualified to take up responsibility?

Mr. McKerrow.—I think as a matter of fact they do expect to get promotion.

Mr. Rahimtoola.—Has there been any definite instance?

Mr. McKerrow.—I think they get tired of waiting.

Mr. Rahimtoola.—When they take up a job they take it with open eyes. They have to get a training just as a man who wants to become a graduate has to go through 4 years training. He cannot become a graduate without

undergoing that period of training. It is very difficult to believe that an average Indian would leave his regular course of training for four or five years under agreement and seek regular service before the period is over.

Mr. McKerrow.—Nevertheless it is a fact that they get tired. Otherwise why do they leave? Probably they find that 5 years is too long a period.

Mr. Rahimtoola.—I understand that 24 men were employed by you out of which 14 had already left.

Mr. Officer.—We have only got at present 10 men.

Mr. Rahimtoola.—Do I understand that you dispensed with the services of some of them because you wanted to have the number of apprentices reduced from 24 to 10?

Mr. Officer.—We never had 24 all at one time. Since the scheme was introduced we have at different times passed through our hands 24 men but only 10 of them remain now.

Mr. Rahimtoola.—These 10 men are the balance of the 24 that you had?

Mr. Officer.—We considered that we can train 10 apprentices only at one time, that is to say, if one goes away we can take on another and in this way 24 have passed through our hands.

Mr. Rahimtoola.—You say in answer to question 22 “In 1924 the Company instituted an apprenticeship scheme and since the inauguration of that scheme no less than 24 young men, drawn from various parts of the country and with a certain amount of knowledge of science and engineering, have entered the Mill as apprentices” and out of these 24 men some have gradually gone out of their own accord and some have been dispensed with. Is that the position?

Mr. Officer.—Yes, some have been found unsuitable and others left of their own accord while the remainder have made satisfactory progress.

Mr. Rahimtoola.—May I know what your future intentions are as regards these 10 men? Is it your intention to absorb them?

Mr. McKerrow.—Absolutely.

Mr. Rahimtoola.—You say that apart from this apprenticeship scheme you have certain Indians in your establishment, namely, one Chief Chemist, two Doctors, one Electrical Engineer, and so on. May I know the amount of salary they draw?

	Per month. Rs.
<i>Mr. McKerrow.</i> —	
Chief Chemist (both mills)	600
<i>No. 1 Mill—</i>	
Beaterman	400—500*
Assistant Engineer	370
Assistant Chemist	175
Overseer	130
Draughtsman	120
Doctor	100
Shift Chemists—three at	100 each.
<i>No. 2 Mill—</i>	
Chemist	300
Assistant Electrical Engineer	275
Assistant Mechanical Engineer	250
Assistant Mechanical Engineer	180
Assistant Chemist	110
Doctor	100
Assistant Finisher	70

* Varies according to tonnage Bonus.

Mr. Rahimtoola.—In the Head Office how many Indians have you got?

Mr. Bellamy.—In the Sales Department we have one Indian salesman on the superior establishment and three assistant salesmen; also we have two in Bombay, one in Rangoon and one in Madras, total 8.

Mr. Rahimtoola.—And how many Europeans?

Mr. Bellamy.—Three European Salesmen.

Mr. Rahimtoola.—Are you employing apprentices in both the mills?

Mr. McKerrow.—Yes, already provided. Also we have plans to build houses to accommodate men as they pass up out of their apprenticeship.

Mr. Rahimtoola.—There is suitable accommodation for the 12 men engaged by you?

Mr. McKerrow.—Yes; there are no complaints.

Mr. Boag.—I would like to go back for a minute to Question 15 about the supplies of wood pulp, and the figures which you give on page 26. You give the world's production as 21 million tons. I think you said that 60 per cent. of that was produced in America?

Mr. Barbour.—Yes, and 60 per cent was consumed in America.

Mr. Boag.—Have you got these figures of production?

Mr. Barbour.—I think I have. I will send you details later on.

Mr. Boag.—Then you go on to say that the production of paper in the United States has increased by one million tons, while both in Canada and in Northern Europe pulp production was half a million tons higher in 1929 than in 1927. I was trying to find out if you can tell me what are the parts of the world which contributed in the main to this production.

Mr. Barbour.—I can give you that in detail.

Mr. Boag.—Corresponding with that have you any information as to the area of forests in these different countries?

Mr. Barbour.—Yes, I have got a note on that.

President.—*Mr. Barbour*, supposing the problem was put in this way. In 1927 the world's production of paper was 21 million tons; that means about 50 million tons of wood, and assuming that there is an increase of about 20 per cent. in 10 years then in 1937 or say before 1940 the world demand for pulp wood would be between 60 and 70 million tons. Have you got any kind of figures to show that the forest areas available in these countries would be sufficient to yield that 60 or 70 million tons? It is a big problem.

Mr. Barbour.—It is difficult to come to any definite conclusion; we can only judge from the tremendous expansion that has taken place that bamboo is coming in as a great factor in the world production of paper.

President.—Will you try and apply your mind to that problem? Taking the quantity as 60 or 70 million tons try to estimate as best you can the available forest resources. Do you think it would be possible to establish a satisfactory balance between the two?

Mr. Barbour.—The Canadian Government has set up a commission to find that out.

Mr. Boag.—One thing that struck me in the course of the discussion is this. I think you said that in Sweden special efforts had been made to ensure that the forests were not exploited without proper arrangements for regeneration. Now, what proportion of the wood used in paper making grows in Sweden? What is the proportion,—20, 30 or 40 per cent.?

Mr. Barbour.—Not quite as large as that.

Mr. Boag.—If Sweden is the only country which is taking steps to conserve its forest resources in this way, and if the proportion of the raw material which grows in Sweden is not large, then if no other country is taking similar steps, it is open to us to assume that the greater part of the world's resources are being used up without proper steps being taken to regenerate them. That was the object of my asking you about the amount of wood that grows in these different countries.

Mr. Barbour.—I see your point.

President.—Let us now take Question 25. I would like to have a statement regarding the available additional Indian market illustrated with reference to the trade returns, which are easier to follow. You have based your calculations on the 1930-31 figures. I would prefer to take it on the 1929-30 figures. The amount of packing paper imported in 1929-30 was 14,300 tons. You exclude the whole of that?

Mr. Barbour.—No. We consider that includes a certain amount of kraft paper which might be possible for us to make later on.

President.—What proportion of that do you take as a capturable market?

Mr. Barbour.—We have not attempted to go into it.

President.—You have arrived at a certain figure and I want to know how that figure has been arrived at.

Mr. Barbour.—We have not actually stated the figure; we only say that the lines which could be made represent 25 per cent., and that *plus* what we make already equals so much.

President.—Your statement suggests a quantity approximating 25,000 tons as the additional market which you could capture. I want to know precisely the classes of paper that you consider might reasonably fall to the share of the Indian industry. As regards packing paper you think kraft paper can be made from bamboo?

Mr. Bellamy.—Yes. Every kind of packing paper can be manufactured in this country.

President.—In your estimate here is the whole of this 14,000 tons included?

Mr. Bellamy.—Not actually but we have it at the back of our minds that every kind of packing paper can be manufactured in this country.

President.—During the next seven or ten years as regards the market for packing paper which you can capture, is there any kind of estimate that you can make? After all the whole question of making kraft from bamboo is somewhat in the experimental stage; all the equipment required for it has got to be installed, and simply because there is a theoretical possibility that packing paper may be made in India, it is no use saying that the whole of this 14,000 tons can be captured in 10 years. What we have got to do is to take the estimates put before us by the various mills and try to form a judgment ourselves. It is no use trying to form a judgment on your figures unless we know fairly definitely how your estimates have been arrived at.

Mr. Bellamy.—My estimate is that 75 per cent. of the total packing paper imports represent kraft. The balance 25 per cent. is of cheaper kinds of packing papers, such as are made from waste materials, *i.e.*, waste paper, etc. There are abundant supplies of raw materials in this country and so if you decide to exclude kraft you can take the quantity as 25 per cent. of the total imports. But again, if you are going to protect kraft as well.

President.—It assumes that. The whole problem is that if protection is continued on an adequate scale what is the kind of market that you could capture?

Mr. Bellamy.—I take it you mean that if you bring within the scope of protection large quantities of paper like packing paper which are at present outside the scope of protection.

President.—That is rather begging the question. How much packing paper is actually produced in India taking the wrappers made by the mills for their own use?

Mr. Bellamy.—Packing papers are made only to a small extent, because every mill is concentrating as far as possible on the manufacture of those paper which are protected.

President.—The cheapest class of wrapping paper to the extent they are required in the mills could be easily made in India?

Mr. Bellamy.—They could be but ordinary wrapping and white papers are not usually made in the same mill on machines side by side. Special plant would be put down.

President.—Take the quantities of wrappers of the kind that you are using for your own purposes, if there were protective duties on wrappers, you would make your own wrappers?

Mr. Bellamy.—Yes.

President.—Looking at it as a practical proposition are you justified in assuming that the market for packing paper can be captured?

Mr. Bellamy.—There is material in this country for making every kind of packing paper.

President.—You have got to look at it from the point of view of two things, making the wrapping paper from bamboo and the possibility of installing the necessary equipment during the next few years. Unless both these things are provided, you are not going to do it.

Mr. Bellamy.—I don't think we are going to make the cheaper varieties of wrapping paper from Bamboo. Bamboo or any new chemical fibre would be too expensive to be used for the cheaper wrapping papers. They would be made out of waste material whether the waste was produced in the mills or collected from outside.

President.—What is the proportion?

Mr. Bellamy.—25 per cent.

President.—Newsprint protected may be left out. Newsprint not protected is 23,000 tons, you don't claim that.

Mr. Bellamy.—Some of it. Under the heading newsprinting not protected there is a large quantity of paper coming into the country which competes with Indian Mill qualities.

President.—Are you claiming some portion of protected newsprinting?

Mr. Bellamy.—Yes, we can't say how much, because owing to the way in which the Customs have kept their figures, we can't say how much of it is genuine newsprint and how much of it is printing paper but nevertheless containing 65 per cent. of mechanical pulp.

President.—This is not a practical estimate. The average duty free price of newsprinting paper, not protected is so low that unless you got protection to the extent of 100 per cent., you would not compete with it.

Mr. Bellamy.—It is those items which are above the average that I am referring to.

President.—That is very hypothetical.

Mr. Barbour.—The average value of newsprinting imports is Rs. 259.

Mr. Bellamy.—Yes, and that is in respect only of those items which come in under white printing not protected containing 65 per cent. Similar papers also come into this country classified as newsprinting containing 65 per cent.

President.—How much of that can you capture?

Mr. Bellamy.—We can't say.

President.—Let us leave that out. Other sorts of printing paper protected—8,171. Obviously a considerable portion of that is high priced special quality which would be outside your reach.

Mr. Bellamy.—There is a very little in that tonnage that can't be made in this country in the way of printings.

President.—You will claim the whole of it.

Mr. Bellamy.—Yes.

President.—Other sorts of printing paper, not protected, do you claim the whole of that?

Mr. Bellamy.—Yes.

President.—Writing paper, protected, the whole of that?

Mr. Bellamy.—Yes.

President.—Letter papers and envelopes?

Mr. Bellamy.—They are manufactured in this country.

President.—You don't want old newspapers?

Mr. Bellamy.—No.

President.—Other kinds of paper?

Mr. Bellamy.—That covers a great many kinds some of which can be manufactured.

President.—Paper manufactures?

Mr. Bellamy.—That is a very indefinite item.

President.—What about all these board papers?

Mr. Bellamy.—That again is a very difficult item which is not split up sufficiently to guide us. Boards are manufactured in this country, but we can't say how much of the imports are of qualities which can be manufactured in this country. I should put it at 25 per cent. Does the figure includes strawboards?

President.—It includes strawboards and other kinds of boards.

Mr. Bellamy.—If it includes strawboards, we could claim not more than 9 or 10 per cent. which could possibly be manufactured in this country.

President.—Do you make any boards?

Mr. Bellamy.—Yes.

President.—How much?

Mr. Bellamy.—About 40 to 50 tons a year.

President.—The only item which you completely exclude is old newspapers.

Mr. Bellamy.—That is so.

President.—Coming to question 29, regarding railway freight, have you had any intimation from railway companies regarding the possibility of an increase in the freight on paper?

Mr. Bellamy.—We have been definitely advised by the East Indian Railway that the rates will be increased from 1st September, giving also the proposed rates.

President.—Would you be able to give me an estimate of the increase in the average freight on the assumption that all the railways with which you are concerned would adopt the new proposed rates.

Mr. Bellamy.—Yes.

President.—What is your present average freight rate supposing you took the whole of your sales last year?

Mr. Bellamy.—On those papers which were despatched by rail the average rate is 2½ pies per lb.

President.—That is how much per ton?

Mr. Bellamy.—Rs. 30 a ton.

President.—Would you be able to tell from your books the exact amount of freight that you incurred on your despatches?

Mr. Wood.—Yes.

President.—Supposing you take your total freight figure and divide it by the tonnage, you will be able to get an average freight per ton.

Mr. Wood.—It is Rs. 10.

President.—On what basis do you sell?

Mr. Bellamy.—We sell f.o.r. destination most of our paper and in most cases we send our consignments forward with freight to pay.

President.—Your invoice states the price, f.o.r., destination out of which payment is made to you of the delivery price less the freight which the consignee pays.

Mr. Bellamy.—That is correct.

President.—Would it be difficult for you to get your average freight?

Mr. Bellamy.—What I can do is to take the quantity of paper despatched to the different markets, multiply each tonnage by the freight to those markets and on that basis get a figure.

President.—If you could kindly work out a figure on that basis, it would be useful and along with that statement say if these new rates proposed by the East Indian Railway came into force on the other railway systems as well, by how much would the average figure that you arrive at be increased with reference to 1930-31.

Mr. Bellamy.—Yes.

President.—What exactly is the point in connection with the Punjab Paper Mills? When did they enter into the market?

Mr. Bellamy.—1929.

President.—And their market in Upper India formed part of the market for which you catered.

Mr. Bellamy.—Yes.

President.—And the paper they put on the market was put at prices definitely lower than your announced prices?

Mr. Bellamy.—Yes.

President.—By how much? Do you remember any particular case? Take for example white printing.

Mr. Bellamy.—They had no definite fixed price. They appointed different agents in different places. They laid down consignment stocks at different places and the price at which they sold the paper depended much on the information given by the agents. As far as I can understand they had no definite fixed price, and as regards the quotations to private customers, we discovered from time to time that they told these customers they were prepared to underquote us to the extent of 3 pies per lb. whatever our price was.

President.—For how long did this go on?

Mr. Bellamy.—Until the mill closed down.

President.—The mill was not in the market for more than 6 months.

Mr. Bellamy.—No.

President.—What was the quantity that came on the market from the Punjab Paper Mills?

Mr. McKerrow.—It was not the quantity but the fact that they began to manufacture that had the effect on the market.

Mr. Bellamy.—We had to reduce our prices to a certain extent.

President.—That is to say the first step was taken by you.

Mr. Bellamy.—No, not by us, but by them.

President.—You cannot remember the approximate total quantity that came on the market.

Mr. Bellamy.—I should think their production was about 300 to 400 tons a month.

President.—For about 4 months?

Mr. Bellamy.—9 months altogether.

President.—Most of it was white paper.

Mr. Bellamy.—White, unbleached and creamlaid.

Mr. Rahimtoola.—I take it in your reply to question 27, that you are definitely against any duty on wood pulp.

Mr. Barbour.—Yes.

Mr. Rahimtoola.—Is it your considered opinion that a duty on wood pulp is a thing which is against the best interests of the industry.

Mr. Barbour.—We quite recognise that it is necessary to provide safeguards to make sure that if protection is given it is not abused. At the

same time I don't think it is necessary that any safeguards should take this form, because, Government can at any time withdraw protection if it is abused, and the consumer were the worse for it.

Mr. Rahimtoola.—That means for the sake of the consumer you are prepared to subordinate the pulp industry to the paper industry?

Mr. Barbour.—We consider that the Pulp Industry is subordinate to the paper industry and as you know we are primarily the paper industry. We are also interested in the pulp industry. In promoting the paper industry, we have to provide our own material and we will do so in time.

Mr. Rahimtoola.—Do you think that any mill, having regard to the price of wood pulp, would use bamboo pulp in preference to wood pulp?

Mr. Barbour.—You know our history. We have endeavoured to use bamboo pulp even when it was very much more expensive.

Mr. Rahimtoola.—You have used it for some definite purpose.

Mr. Barbour.—Quite so.

Mr. Rahimtoola.—That purpose was to establish the case for protection.

Mr. Barbour.—Partly perhaps, but we. . . .

Mr. Rahimtoola.—When you got protection you definitely gave the Board and the Government to understand that you would try and do experimental work on bamboo. What we want to know is whether any mill which will be started hereafter is likely to use wood pulp or the bamboo pulp taking the present price of wood pulp?

Mr. McKerrow.—Naturally wood pulp.

Mr. Rahimtoola.—You know the condition of the Fiscal Commission which lays down that not only the raw material should be available in abundance but the industry should make use of that raw material, and I would like to know how you are going to view the proposal. Are you going to subordinate the bamboo pulp, and leave it to look after itself?

Mr. Barbour.—Our view is that the Indian paper maker has to find his salvation in bamboo pulp and I think it is regrettable that Government should feel bound to use something in the nature of compulsion to induce the Indian paper maker to follow the path leading to his own salvation.

Mr. Rahimtoola.—The Fiscal Commission, as you know, has laid down certain conditions and with reference to those conditions the Tariff Board has got to judge the question of any industry which requires or deserves protection. One of the conditions as I have already pointed out is that there should be abundant raw material available in the country and that the material must be used by the industry which demands protection. I want to know how you are in a position to establish a case for protection that you will be in a position to use large quantities of bamboo pulp without the bamboo pulp being protected.

Mr. Barbour.—If the paper industry receives protection and can provide a market for bamboo pulp, it will use bamboo pulp.

Mr. Rahimtoola.—Do I understand that the present protection to paper is more than sufficient having regard to the prices in operation?

Mr. Barbour.—I don't quite follow the question.

Mr. Rahimtoola.—Your point is that bamboo should be left to take care of itself.

Mr. Barbour.—Yes.

Mr. Rahimtoola.—Which means that the present protection granted to the industry is more than what it ought to be and that having got a little surplus you will be able to adjust yourselves to bamboo.

Mr. Barbour.—I don't think that the present protection is more than enough. If it is sufficient it will be possible for the mills to go ahead with bamboo and be able to use bamboo in preference to wood pulp. If there is no protection, we should have to use wood pulp and give up the hope of establishing a pulp industry in the country.

Mr. Rahimtoola.—Even if you get protection for the paper Industry at least the mill which will be in a position to use bamboo pulp cannot do so beneficially to them unless it is protected against wood pulp. You admitted that just now.

Mr. Barbour.—I don't quite follow that.

Mr. Rahimtoola.—My point is this that at present having regard to the price of wood pulp a mill coming into existence owing to protection will be ill advised from the commercial point of view to use bamboo pulp at the present price.

Mr. Barbour.—Yes, if a new paper mill comes into existence.

Mr. Rahimtoola.—The object of protection is that there should be many more mills like yours in this country. It is for the expansion of the industry that the protection is given—not only for the benefit of a few existing mills but for the larger benefit of the country and its progress.

Mr. Barbour.—Might I suggest then that Government might prohibit the import of wood pulp except in certain quantities.

Mr. Rahimtoola.—Is that your alternative?

Mr. Barbour.—That would be a means of stopping the import of wood pulp.

Mr. Rahimtoola.—You know that at present bamboo pulp is not produced in sufficient quantities to enable other mills who are not using bamboo pulp to do so.

Mr. Barbour.—Therefore I would suggest that only a certain quantity of wood pulp should be allowed to be imported for the use of the existing manufacturers. Of course, that is a proposal which I have not thought out fully.

President.—You are not putting forward anything in the nature of a considered scheme.

Mr. Barbour.—No.

Mr. McKerrow.—May I say that we believe that we will be able to make bamboo pulp cheaper than wood pulp.

Mr. Rahimtoola.—As regards the question of competition from the Punjab Paper Mills, you gave us to understand that you reduced the prices only after the paper of the Punjab Mill came in the market. What was the price when their paper first came into the market? Was it lower than yours?

Mr. Bellamy.—Yes.

Mr. Rahimtoola.—That was the reason which led to your reducing the price.

Mr. Bellamy.—Yes, because we had to maintain our market.

Mr. Rahimtoola.—In your answer to Question 34 you say “Bombay is a very large consuming centre as well as an important point of distribution. There is however a persistent bias in favour of imported qualities and against qualities of local manufacture”. May I know what you mean by that?

Mr. Bellamy.—I think we have already explained that with reference to another question. It is because there is a much larger margin of profit to be made in foreign paper than could be made from the Indian paper. The price of Indian paper is definitely known throughout the country. The consumer knows what it is, but in the case of imported paper the dealer gets it cheaper by buying up cheap lots and even if he does not always buy it cheaper, he is often able to sell at a better price by saying that the imported paper is better than the locally made paper and the consumer is led away by this plea.

Mr. Rahimtoola.—That means, as you have pointed out, the dealer is able to hide his cost price from the customer.

Mr. Bellamy.—That is the case in regard to foreign paper.

President.—It is a point which has got to be cleared up when the Calcutta Paper Traders Association come before us. To your knowledge what is the usual practice with regard to imported papers? The invoice price may occasionally be higher than the actual market price, that is to say the invoice price represents the actual c.i.f. price—the cost of the paper c.i.f.—and in addition to that contains also a reserve, a margin out of which deductions can be made on account of commissions.

Mr. Bellamy.—The utmost they get is a commission of 2½ per cent.

President.—I thought that there was a suggestion of that kind made in the last enquiry, but I cannot remember the reference just now.

Mr. Boag.—I should like to ask one or two questions about your prices. I understand you fix your selling prices in consultation with the other mills?

Mr. Bellamy.—That is so.

Mr. Boag.—Both for the Calcutta market and for upcountry.

Mr. Bellamy.—Yes.

Mr. Boag.—How long have you been doing this?

Mr. Bellamy.—We have been doing it for many years past with the Bengal Paper Mills Company. With the India Paper Pulp Company we have been working together in Calcutta for about 19 months and since 1st May of this year in the case of upcountry markets.

Mr. Boag.—On what basis do you fix your prices?

Mr. Bellamy.—According to the average import price of the particular quality at the time.

Mr. Boag.—Entirely with reference to the price of the imported paper of similar quality?

Mr. Bellamy.—Yes.

Mr. Boag.—Not with reference to the cost of manufacture?

Mr. Bellamy.—No.

Mr. Boag.—What are your upcountry prices based on?

Mr. Bellamy.—They are based as far as possible on the Calcutta price plus freight. When we get to markets like Delhi and Lahore, the price cannot stand the burden of full freight and so we reduce the price to meet the competition from the other side of India. That is specially necessary now. About two years ago the Railways introduced specially low rates from the ports to Delhi, I mean specially low wagon load freights.

President.—When was that?

Mr. Bellamy.—About two years ago. To-day imported paper can be landed at Delhi and Lahore much more cheaply than it could before on account of these low freight rates.

President.—Does that apply to both the G. I. P. and B. B. & C. I.?

Mr. Bellamy.—Yes.

President.—My recollection is that the B. B. & C. I. have told us that there are no special rates allowed on their system.

Mr. Bellamy.—I am not sure.

President.—I think that so far as the G. I. P. Railway is concerned you are right.

Mr. Barbour.—May I point out that the distance from Bombay to Delhi by the B. B. & C. I. route is shorter than the distance by the G. I. P. route, so that the offering of same rates by the G. I. P. would work out to be a slightly lower rate.

President.—Really speaking there is no competition from Bombay. All the competition comes from Karachi I think. Supposing you take Delhi as a centre and the area served by Delhi within a radius of 200 miles, practically all the competition comes from Karachi.

Mr. Bellamy.—If you take Lahore, it is from Karachi. So far as Delhi is concerned, it is from Bombay.

President.—So far as the area north of Delhi, that is, towards Lahore is concerned, the competition is from Karachi, but from Delhi southwards towards the western coast, you are subject to competition from Bombay.

Mr. Bellamy.—Yes.

President.—But it is really only to a small extent that the competition from Bombay can come.

Mr. Bellamy.—It is only to a small extent. We do our best to eliminate competition because if we were to attempt to sell in Delhi at Calcutta prices *plus* freight, we should not be able to hold the market. We should be ousted by competition from Bombay.

Mr. Boag.—We have seen copies of some correspondence you had with the local dealers about certain prices—some cases in which you sold upcountry at lower prices than in Calcutta. Can you tell us how that came about?

Mr. Bellamy.—To one fairly large dealer in Lahore we had to quote a lower price in order to get the contract; otherwise as far as we are concerned I don't think there are any other contracts at a lower price.

Mr. Boag.—As far as I remember, the correspondence sent to us dealt with Allahabad.

Mr. Bellamy.—That does not refer to sales by the Titaghur Paper Mills.

Mr. Boag.—The correspondence was with you.

Mr. Bellamy.—It referred to another mill.

Mr. Boag.—Why should you be involved in any correspondence when the complaint was about another mill?

President.—Perhaps the complaint was delivered at the wrong place.

Mr. Bellamy.—They usually make their complaints to us and expect us to discuss them with other mills and smooth the difficulties over for them.

Mr. Boag.—Have you any further information to give us beyond what you have given in your answer to question 33 about unremunerative prices of imported paper? You have quoted two cases here. Are they typical of many cases that have come to your notice or are they only two isolated cases?

Mr. Bellamy.—That is in the case of the unbleached to Madras.

Mr. Boag.—I was not for the moment referring to the classification of printing paper; I was rather referring to the statement you make that the prices at which foreign producers are at present selling for export are unremunerative.

Mr. Bellamy.—I have a note here from a cutting from the Paper Trade Review. May I read it?

“Mr. Gray of Messrs. Jas. Bertram & Son, Limited said that papermakers of this country had gone through very hard times and one could not blame them if they were slow to take up new ideas sometimes. After all he did not think the paper trade in this country was very far behind other countries. He had travelled in most papermaking countries and only recently he paid a visit to 14 supposed to be up to date German pulp and paper mills, and there was not one of them, he would say, was up to date, compared with the good mills in this country. Their coal costs per ton of wood pulp paper were as high in some cases as £4. They were behind the times as regarded labour saving devices. The only reason why they were able to hold their own was that they got better prices in Germany, their mills were kept at full production and they dumped 30 or 40 per cent over here.”

President.—It is a letter written by an aggrieved party?

Mr. Bellamy.—Not necessarily because Jas. Bertram & Son are not papermakers. They are engineers and their business is as much in Germany as in England.

President.—We often get complaints about dumping. In practically every enquiry that we undertake we hear the problem of dumping and it is difficult for us to investigate with any kind of accuracy and in every enquiry we find on analysis that charges of dumping break down.

Mr. Bellamy.—We recently had a quotation from a French machinery supplier not in connection with paper—and he quoted a special export discount of 20 per cent. I can send you the actual quotation. It shows that the practice of offering special export inducements does exist.

Mr. Boag.—As regards paper you have no further details to put before us?

Mr. Bellamy.—Not beyond what we have already shewn.

Mr. Boag.—In answer to question 35 "Is there any difference in price between bamboo paper and paper made from other indigenous materials" you say that as far as your paper is concerned there is none.

Mr. Bellamy.—That is so.

Mr. Boag.—Is there any difference in the case of paper made by other Mills?

Mr. Bellamy.—There is a difference.

President.—The position really is very complicated. The kind of paper that has come on the market which contains bamboo contains it to such a small extent that you are hardly justified in calling it bamboo paper. That is one difficulty, and the other difficulty is that the mills which are in the habit of making bamboo paper here and placing them on the market, have other disadvantages with regard to marketing.

Mr. Bellamy.—Our creamlaid paper which is our second largest item of production and a very important paper in the market has contained for a long time past usually about 60 per cent. of bamboo and I think I am safe in saying that our creamlaid paper is the most popular in this country.

Mr. Bookless.—It did contain 60 per cent. but not just now. We made a lot of them with 60 per cent. bamboo but our present run is nearer 40 per cent. It may have been reduced on account of the fact that we have had to introduce bamboo into other qualities.

Mr. Bellamy.—In antique we have a paper, which is a very important item of consumption in this country, which is made up about 80 per cent. bamboo. Bamboo is the best fibre we have struck for this class of paper.

President.—As far as the purchaser in the bazar is concerned how does a man make up his mind as to whether he should buy bamboo paper or grass paper? I can understand a purchaser like the Government testing paper with regard to strength and so on, but for the ordinary man in the bazar the only way I suppose to decide is partly by appearance of the paper and partly by bulk?

Mr. Bellamy.—That is so. He feels it to see whether it is soft and so on to the touch. He is really very little interested whether it contains bamboo or not.

President.—The man who goes by touch would fancy grass paper I think.

Mr. Bookless.—Not always. It depends on the kind of job he is going to use it for. If it is for printing, I take it he would prefer bamboo. If it is something in the way of Indian account paper, that is to say paper which is used in the bazar for keeping accounts, I think he would take grass paper because he knows it is harder. On this account it is not so suitable for modern printing machinery, but it is more durable for the purpose of Indian account books and so on.

President.—That is to say the customer who has got to make up his mind by feeling the bulk of the paper and the softness, decides that really with reference to the particular use he has in view?

Mr. Bookless.—That is so.

President.—I suppose as far as clean appearance is concerned, it stands to reason that bamboo paper would be more attractive than grass?

Mr. Bellamy.—It is true. It is perfectly clean, even cleaner than wood pulp sometimes.

President.—With regard to your answer to question 37, the proposal that you make here is that the present tariff entry with regard to newsprint should be altered in the direction of raising the limit of mechanical wood pulp?

Mr. Bellamy.—Yes.

President.—The entry as it stood before 1927 was based upon 65 per cent. in relation to the total weight?

Mr. Bellamy.—Yes.

President.—It was altered in 1927 to 65 per cent. of the fibre content. Your present suggestion is that the fibre content may be retained as the basis but the percentage should be raised from 65 to 75 per cent., and the result would be that practically you would restore the original 65 per cent. of the total weight?

Mr. Bellamy.—That is so.

President.—We had a good deal of correspondence on the subject of newsprint from people interested in it in different ways and I find that there are really two issues in this case. From the point of view of the manufacturer the issue is primarily that 65 per cent. assessed on the fibre content would admit large quantities of cheap printing papers which compete with the paper that he can make in this country, and the other issue raised from the point of view of the importer is that the particular test by which this percentage is ascertained, whether it is total weight or fibre content, is so variable in its result that no importer can do business on a steady basis. I find that in this representation that you have made there is no reference to the question of the correct sort of test to apply; you are much more interested in the question of altering the percentage.

Mr. Bellamy.—That is because, as you know, the Customs Department at Calcutta and the Store Examiner, who is an expert in these matters, have gone into these things very thoroughly within the past few years and I know that in the case of Mr. Sinha, the Store Examiner, he has got full particulars of the latest practice at Home and has gone into it from the Indian point of view, and I think he is in a position to give you better information on this point than we can and his information will be more up to date.

President.—He can give us information as to the best sort of test to apply?

Mr. Bellamy.—Yes.

President.—We are not concerned with the precise way in which the tariff proposal is to be administered, but are you going to contend here that the test which is at present applied by the Customs for the determination of mechanical wood pulp is unsatisfactory?

Mr. Bellamy.—I am not in a position to say because I cannot tell you what test they are working on at present.

President.—Are not manufacturers kept in touch with the changes made by the Customs department with regard to tests applied for the determination of wood pulp?

Mr. Bellamy.—Not necessarily.

President.—We addressed the Collectors of Customs on this subject as to how far the test which is applied now is a test which in its result has been an improvement upon previous tests, and although there are still a certain number of disputable cases, the general impression that one gathers from the reports of the Collectors of Customs is that the number of borderline cases have been considerably reduced since the present test has been employed. So, judging for the time being entirely from the reports of Collectors of Customs, I am inclined to think that as far as test is concerned there can be no legitimate complaint.

Mr. Bellamy.—That is so. We have ourselves felt that the number of complaints has fallen and that this fibre basis is so much more satisfactory that we have made our proposals on that basis.

President.—You think from your experience that the fibre content basis is a better test on which to assess the mechanical wood pulp?

Mr. Bellamy.—Yes.

President.—And, therefore, while you want some limit with regard to mechanical wood pulp you would rather have that on the fibre content?

Mr. Bellamy.—We would not like to disturb the present working.

President.—I take it that the main ground on which you ask for this alteration from 65 to 75 per cent. is the increase in imports of cheap mechanical papers?

Mr. Bellamy.—Yes.

President.—In other words, it is really with regard to printing paper imported under the heading of "Printing other than newsprint, not protected"; it is in regard to that item that the complaint arises?

Mr. Bellamy.—I think it depends on the way the manufacturer describes the goods in his invoice as to whether they come under that heading or come under the heading newsprint.

President.—When you decided to make this suggestion for altering the percentage you made the suggestion on the strength of the evidence supplied by trade figures, did you not?

Mr. Bellamy.—Not only that; what we had in mind most of the time was the difficulty of selling our papers in the market without any reference to trade figures. The trade figures came along later to support what we had found in the market.

President.—Since we have no access to the market as you have, we have to base our conclusions upon the figures and as I look at it the problem really reduces itself to the variations which have occurred in respect of printing paper other than news print not protected. Since 1927-28 when the new ruling was given the total imports of that class of printing paper rose from 4,886 tons to 9,463 tons, and the contention of manufacturers is that this is the direct result of the new ruling, and to that extent it has deprived the Indian industry of a market for cheap printing paper.

Mr. Bellamy.—That is so.

President.—Since then imports have steadily declined?

Mr. Bellamy.—Yes. Imports were down generally in 1930-31.

President.—This figure of 6,011 tons for 1930-31 of the class of paper about which you complain is slightly lower than the figure for the corresponding class of paper for 1925-26? The only way in which we can make up our minds is by judging from the figures that you have given us and from the figures in the trade returns to what extent you have actually suffered. That after all is the real test and that I can decide only by looking at your figures of output of the different classes of paper. I am looking at Annexure A. Am I right in thinking that competition from these classes of paper affects badami, coloured or unbleached?

Mr. Bellamy.—And white printing very largely. It is not shown by our production figures, because our production has increased.

President.—As a matter of fact I am going to suggest that your production figures do not bear out any of these complaints. That is really what I am trying to get at. After all I cannot take the general impression that you have formed by looking at papers in the market. I have got to go by figures, and the suggestion I am going to make is this: it is difficult for me on your figures of production to satisfy myself that there has been any serious diminution in your output or sales. First of all let us try and estimate your general position with regard to the market for the classes of paper that you can make. We have got figures for 1926-27 of the total quantity of paper

made by the Indian mills which I find from figures given to us by the Director-General is 32,144 tons. That was in 1926-27. I presume the bulk of that was protected paper. In that year 1926-27 imported protected paper of all classes was 16,826 tons. That is to say, there was a total market in this country for the classes of paper which are protected to the extent of 48,970 tons. Out of that the Indian mills have captured 12,134 tons. That meant in 1926-27 a year after the Protection Act was passed you held 65 per cent. of that market. In 1930-31 the total production of the Indian mills was 40,000 and the total imports of protected paper was 14,179 giving you a total of 54,179 tons. The proportion of the protected market held by the Indian industry is 74 per cent. In 1926-27 it was 65 and in 1930-31 it was 74 per cent. It is not merely that you have maintained your position, but the proportion of the market for all classes of paper that you make has increased from 65 to 74 per cent.

Mr. Bellamy.—May I say this that although our figures show satisfactory results in that way, there has been a fall back in respect of some qualities. The only quality of white printing paper we produce now is a first quality paper.

President.—But really, Mr. Bellamy, you cannot urge that as a serious matter for complaint.

Mr. Bellamy.—What I was going to say was that we have been deprived of an opportunity of making the lower grades of white printings in our mills, because of this competition in the mechanical papers.

President.—The only serious point then is the adjustment of your proportion of different classes of output. After all you cannot produce to more than capacity. You are producing about 20,000 tons. If you are able to capture this 6,000 tons, you simply cannot make it.

Mr. Bellamy.—That is the position as far as the Titaghur Paper Mills are concerned at present, but we cannot afford to look at this matter on selfish lines. Unless the industry is given protection in these lower grade papers there will not be a sufficiently large margin available for further development.

President.—Let us leave the future alone for the time being. This particular complaint is based on your experience of 3 years which have followed the new ruling and for the time being let us confine our consideration to that. As far as these three years are concerned, these figures do not show that you have any serious matter for complaint. If the Indian industry has not merely been able to maintain but increase its proportion of the total protected market, then this new rule has not affected you adversely.

Mr. Bellamy.—It is in that we have to change over to the superior kinds of papers in larger proportion than we had to make before. If you could see one of our sample books of some years ago, you would find there were different kinds of printings called Nos. I, II and III according to quality and we used to make a large quantity of No. III printing. We make none to-day; and we make only one quality and that is No. I, No. II and No. III have been completely eliminated.

President.—While there has been at the same time a steady increase in your total production.

Mr. Bellamy.—Yes, of the better classes of paper.

President.—In the total production of all classes of paper. There has been a steady increase in production.

Mr. Bellamy.—We cannot complain in that respect.

President.—You have not merely gradually increased your production until you have now reached maximum capacity, but you have also increased your proportion of the total market for these classes of paper. On these two grounds there can be no complaint.

Mr. Bellamy.—No.

President.—The only complaint is that you would prefer to manufacture one class of paper rather than another.

Mr. Bellamy.—That is so.

President.—You do not propose that you want to produce these 6,000 tons of paper in addition to your present output because that is a physical impossibility.

Mr. Bellamy.—With the present equipment?

President.—I am talking of the past three years.

Mr. Bellamy.—It is quite probable that had the market been available, we might have increased our output. Still further we have not reached our maximum production in the figures that we have shown.

President.—You can produce about 800 tons more.

Mr. Barbour.—About 1,800 tons more and then there are other mills.

President.—All the other mills are producing to more than capacity.

Mr. Barbour.—I can show you figures that we have made more paper in Titagur than our maximum capacity. That looks rather ridiculous. Our maximum capacity is a calculated figure. We put it on the basis of actual monthly production.

President.—You want a settlement in your favour on the ground that while you are producing to your maximum capacity you cannot produce to more than your maximum capacity.

Mr. Bookless.—May I say that the capacity of a paper mill is practically limited by the quality of the production. I think it has been borne out that the production of our mill has gone up considerably. You will also notice that with increased production the quality has at the same time gone up. I really believe that if we have some of these papers protected, perhaps, in 12 months' time the total production capacity of our mills would be much higher than it is to-day.

President.—You ought to have thought of this answer when I asked you about the capacity. If it was really the question of your being able to work up to that capacity, the fact would have been mentioned to us this morning.

Mr. Barbour.—I would say after all there is another mill in the country which is not working.

President.—You mean the Punjab Paper Mills.

Mr. Barbour.—Yes. If the basis of protection is broadened, this mill would come on the market after sometime with a production of paper. It would help us all if the area of the market is widened.

President.—You are complaining that the Punjab Paper Mills would be coming up again. As far as you are concerned during the past three years it has not caused you serious harm judging from your output.

Mr. Bellamy.—It has made it much more difficult to sell our paper.

President.—But you have sold it.

Mr. Bellamy.—Yes, we have. May I illustrate our experience of a case. It is only a small case though. We used to have an order for 1,000 or 2,000 reams of this particular paper (sample shown) year after year. It is now lost to us. This pamphlet is now produced on a paper which is brought in under the 65 per cent. rule. It is a small thing, but it is representative of our difficulties. We have lost many orders like this which we used to have before.

President.—The real ground on which the Tariff Board in 1925 suggested the exclusion of newsprint was that newsprint at that time came into the country at a price at which it would be impossible for the Indian industry to compete even with a protective duty.

Mr. Bellamy.—So it is to-day. That is to say, real newsprint.

President.—If you take these classes of paper that I have been referring to in the trade returns, other sorts of printing paper not protected, the average price in 1930-31 is Rs. 316 a ton. That works out to somewhere about 2-25 annas a lb. Your contention is right to this extent that if a protective duty of 1 anna were applied, taking the average price, the duty paid price would be 3-25 and would therefore be within your reach.

Mr. Bellamy.—Yes.

President.—That assumes, of course, that the protective duty would remain at one anna. It may or may not. If, for any reason, the protective duty was reduced, then the possibility of your competing with paper of that average duty free price would be distinctly more difficult. That is to say, if on a consideration of costs and prices of the principal classes of protected paper in this country, it was found that a protective duty of something less than the present duty might do, then this class might conceivably be outside your reach. As the duty stands at present your contention is probably right. But if the question is to be raised with reference to the future scheme, it would depend entirely on the rate of duty.

Mr. Bellamy.—I see the point.

President.—The only other point that I want to raise with regard to this is this. Your suggestion is that if this limit of mechanical pulp is raised from 65 to 75 per cent., it is likely that certain large newspapers in this country might be enabled to get the classes of paper that they use at a revenue duty.

Mr. Bellamy.—Yes.

President.—You are prepared in their case to accept a licensing system. A licensing system would be quite workable if the parties concerned are large parties and few in numbers. Now as far as the large numbers of small consumers and newspapers are concerned, your contention is that they could get paper of the kind that they require free of the protective duty even on the basis of 75 per cent. What precisely is the evidence on which you base that statement?

Mr. Bellamy.—Since we made that statement I have actually approached the Times of India, Bombay, and told them what our proposals to you were to be in respect of their paper. Mr. Smith of the Times of India wrote to me afterwards and told me after reading through our proposals, he had no objection to that. He only qualified his statement to the extent that he would have to watch things carefully to see how our proposals progressed before the Tariff Board and I take it in the Assembly also.

President.—Have you approached any other newspaper?

Mr. Bellamy.—We have approached liberal newspapers and they said that paper containing 75 per cent. of mechanical wood pulp would suit their purpose.

President.—Is it a confidential document?

Mr. Bellamy.—I have not asked for permission to produce it.

President.—These are English edited newspapers?

Mr. Bellamy.—One is an English and one Indian.

President.—All edited in English?

Mr. Bellamy.—Yes.

President.—The party with whom we would be most concerned is the vernacular papers.

Mr. Bellamy.—I have never seen a vernacular paper in Calcutta which does not produce on a paper containing about 75 per cent. of mechanical wood or at any rate on the cheapest kind of mechanical wood paper.

President.—The paper which is now used by *Basumati* would come free of the protective duty if the limit was 75 per cent.?

Mr. Bellamy.—Yes, for its ordinary daily issues. Sometimes it prints a special number for Diwali and then they require a paper which contains perhaps, only 65 per cent. mechanical. That is a paper which could be licensed if you approved of our proposals for importing special requirements under license.

President.—You have put forward this after consultation with the big consumers?

Mr. Bellamy.—Yes.

President.—You have no evidence with regard to the small consumers?

Mr. Bellamy.—No.

President.—That is to say, local vernacular newspapers, printers of vernacular literature of all kinds which I believe from my own knowledge is often printed on cheap printing paper of this kind: how far they would be affected by a ruling of the kind you propose you have no evidence?

Mr. Bellamy.—The best way I can answer that is to say that I have taken the trouble to get a collection of samples (shewn) containing definitely 75 and 65 per cent. of mechanical wood pulp.

President.—That is verifying the results of your testing. I cannot take the responsibility for that.

Mr. Bellamy.—It is the manufacturers' statement.

President.—I will tell you why I am raising that question. When we were enquiring into the matter in 1927, one of the difficulties we felt at that time was precisely this that there was a large and somewhat indeterminate class of consumers who used printing paper of this kind and if the protective duty was applied to that class of consumers, it would cause a hardship incommensurate with the advantage that the Indian paper industry would derive.

Mr. Bellamy.—I think that you will find that most of the papers coming from Norway and Sweden contain 75 per cent. of mechanical wood pulp and I think it was given in evidence by the "Statesman" and the "Times of India" that their paper contained at least 70 per cent. of mechanical wood pulp.

President.—I am not worried in this matter so far as those leading newspapers are concerned because if the new ruling affects them adversely it is possible to make special arrangements in their case. That is not a question which appears to present any difficulty. The difficulty is with regard to the large and somewhat indeterminate class of small consumers. It is impossible for us to tell how the new ruling would affect them. Therefore unless there is positive evidence that vernacular newspapers and vernacular literature would not suffer by this ruling, I should be disinclined to raise the issue.

Mr. Bellamy.—The quality of paper that they would get would have 75 per cent. and over.

President.—You know as well as, and perhaps better than, I do that the classes of paper for which manufacturers give particular specifications are not classified exactly on that basis by the tests adopted in our Customs.

Mr. Bellamy.—They are specially indented for on a fibre to fibre basis.

President.—One consignment of the same class of paper has a different percentage from another consignment. The class of paper which satisfies the test in Norway does not satisfy the test here. The paper which satisfies the test in Calcutta does not satisfy the test in Karachi. Therefore it is no use going into those figures.

Mr. Barbour.—Our proposal amounts only to this. The larger proportion of mechanical wood pulp would make it more readily recognisable than what it is at present. We contend that paper under the present definition comes in as an imitation of our paper and it enables the dealer to deceive the consumer to the latter's detriment as well as to ours. The fact that imports have gone down—and they went down even before the depression began to have its effect—shows to my mind that the consumer was beginning to realise that the cheaper paper he was buying in place of the Indian made paper was not so good as he thought it was and did not suit his purpose so well. Therefore he would rather buy the Indian made paper at a slightly higher price. We believe that the change would be for the protection of the consumer.

President.—Unfortunately the consumer has not expressed his opinion.

Mr. Bellamy.—He is not vocal. That is the trouble. It is the importer not the consumer who is vocal

President.—We have to decide as between the importer and the manufacturer and form our opinion as to what the consumer's position is.

Mr. Bellamy.—It is the consumer's case which demands consideration on these lines.

President.—Last time when we were enquiring into this question, probably we would not have known this aspect of the case but for the fact that the *Basumati* newspaper decided to inform us of their point of view. Then, it transpired that that newspaper along with certain other vernacular newspapers were likely to be hit by a ruling based upon 65 per cent. on the total.

Mr. Bellamy.—We don't wish to interfere with vernacular newspapers in any way. We want them to get all their requirements free of protective duty. The sort of thing we are up against is that books should not be produced out of papers—cheap mechanical papers—which are made to imitate pure papers. Very often the man ordering that kind of paper for printing books does not know until the book has been in stock for about 12 months, that it will turn yellow. So it is in the interests of the consumer we suggest that the position should be properly defined in regard to newsprinting paper and printing paper.

President.—It is open to you to give me such evidence as you have with regard to the way in which this new ruling would react upon vernacular newspapers and printers of vernacular literature. Coming to Question 40, I want to ask whether all these replacements and extensions which have been mentioned in reply to Question 40 are included in the present replacement value that you give later on. You give the replacement cost figure as Rs. 1½ crores. Is that the replacement cost of the plant including all these extensions that you have in view?

Mr. Barbour.—No, it is based upon the present plant as it stands. As you know it is a very difficult figure to arrive at.

President.—Is your estimate based upon a careful scrutiny of recent quotations?

Mr. Barbour.—No.

President.—It is only a general estimate?

Mr. Barbour.—Yes.

President.—It represents your estimate of the replacement cost of a plant which makes 20,000 tons of paper and about 10,000 tons of pulp.

Mr. Barbour.—Yes.

President.—So that in order to arrive at a correct estimate of the replacement cost of a self-contained plant to your figure we ought to add the amount necessary for the erection of a pulp plant with a capacity of 10,000 tons, is that right?

Mr. Barbour.—Yes.

President.—So that for the purposes of exact calculation you don't think that your estimate would do.

Mr. Barbour.—No. But we suggest that it would compare with the cost given by others such as the mills at Naihati and at Lahore. As a matter of fact it works out approximately to what the Tariff Board have suggested.

President.—It is Rs. 150 lakhs. To that if you add Rs. 25 lakhs which is Mr. Raitt's figure for a pulp plant with a capacity of 10,000 tons, you get Rs. 175 lakhs which would yield, I believe, about Rs. 875 per ton. Now since you yourselves are not altogether satisfied about the accuracy of this estimate, we might stick to our original figure, that is the figure arrived at by the Tariff Board in 1925, I may also add that since 1924 there has been a very considerable fall in the general level of prices.

Mr. Barbour.—On the other hand the estimate—it is only my opinion—is not a full and correct estimate.

President.—Which figure do you mean?

Mr. Barbour.—£300,000 which was used in 1925.

President.—On the whole they thought that Rs. 800 was a reasonable figure.

Mr. Barbour.—Yes.

President.—In answer to Question 49, you give us your figures of future costs of pulp? Are all these gone dry?

Mr. Wood.—Yes, they are.

President.—There is only one statement in regard to which I should like the figure verified and that is rather an important statement. Are these costs of bamboo pulp for 1930-31 your actual costs?

Mr. Wood.—Yes.

President.—Your costs of pulp are almost entirely directly charged?

Mr. Wood.—Yes.

President.—Not merely your material costs but also your conversion costs?

Mr. Wood.—Yes.

President.—There is no arbitrary estimate?

Mr. Wood.—No.

President.—It is only your "on cost" figures which represent a share of the superior management?

Mr. Wood.—Yes.

President.—If this statement is an actual statement of works costs I cannot understand this figure of bamboo cost that you give. Taking this air dry basis, the cost is 68.5. Unless my arithmetic is wrong, it represents Rs. 30 per ton.

Mr. Wood.—That is so.

President.—But that is not your actual cost. Your actual cost in 1930-31 was Rs. 38.

Mr. Officer.—Yes, Rs. 38 for bamboo from Cuttack. In this cost there is local bamboo purchased at the rate of Rs. 22 per ton delivered at the mill. That accounts for the difference.

President.—So, this Rs. 30 was your average?

Mr. Wood.—Yes.

Mr. Rahimtoola.—At present Kraft is not manufactured in India?

Mr. Bellamy.—Not at present. We have made a small quantity, but it is not regularly made.

Mr. Rahimtoola.—But you think that it is likely to be made in India.

Mr. Bellamy.—Our experiments have led us to believe that it can be made very easily from bamboo.

Mr. Rahimtoola.—At present your experience is not sufficient to enable you to say anything definitely on the subject.

Mr. Bellamy.—No, not definitely.

Mr. Rahimtoola.—Coming to the question of Managing Agents Agreement which you have forwarded to us: the Managing Agents draw a fixed monthly salary of Rs. 2,000?

Mr. McKerrow.—Yes.

Mr. Rahimtoola.—In addition to that, they get a commission of 10 per cent. payable half-yearly?

Mr. McKerrow.—Yes.

Mr. Rahimtoola.—In July 1910 the Articles of Association were altered.

Mr. Officer.—Yes.

Mr. Rahimtoola.—Now the substitution is "before any sums are set aside for depreciation, reserve or other funds or purposes" for the words "available for dividends".

Mr. Officer.—That has been further altered.

Mr. Rahimtoola.—It is not stated here.

Mr. Officer.—It was amended at a meeting of the Board about three years ago to the following effect. The Managing Agents would continue the policy which they adopted ever since the reconstruction of the Company only to charge their commission at 10 per cent. on the net profits available after allowing for statutory depreciation.

Mr. Rahimtoola.—Has that been passed by the shareholders?

Mr. Officer.—That has been accepted by the Board of Directors. The Board carry out the provisions of that minute.



Bengal Paper Mill Company, Limited, Calcutta.

A.—WRITTEN.

(1) *Letter dated the 27th April, 1931.*

With reference to the enquiry being conducted by your Board, at the instance of the Government of India, as to how far the Bamboo Paper Industry (Protection Act), 1925, has achieved its purpose, whether it is desirable to continue the protection measures and if so what these measures should be, we beg to place before you a brief statement of our views, for your consideration.

We propose dealing first with the question of how far the Act has achieved its purpose, by giving the following information:—

When the Bamboo Paper Industry (Protection Act), 1925, came into force in September 1925 it was clearly stated by the Tariff Board that this Company's Mill could not use bamboo effectively without substantial modifications in its equipment and further that the investigations could not be carried out adequately in any existing Mill until fresh capital was raised and new plant installed.

After consultation with Home experts, a scheme was drawn up embodying our requirements of steam and power plant, bleaching and crushing plant, also digesters and other auxiliary equipment necessary for the introduction of bamboo pulp for paper making purposes.

This Company at the time the tariff was granted, was in very serious financial difficulties, and until it recovered from this embarrassing position it was impossible to find the requisite funds required in connection with the plant necessary to meet the conditions for which the protection to the industry was granted. The financial position of the Company was not strong enough until the latter part of the year 1927, to warrant large commitments of expenditure on the plant necessary for the manufacture of bamboo pulp.

The first section of our scheme to be undertaken was additions to our steam raising and power plants. This entailed an expenditure of approximately Rs. 7 lakhs and the plant was put into satisfactory operation in the early part of 1930.

Our second portion of the scheme was to make provision for extensive additions to our straining and bleaching plants. These are now well on the way to completion and the expenditure incurred under this heading is approximately Rs. 1½ lakhs.

The erection of the crushing plant for bamboo, together with the necessary auxiliaries, amounting to an expenditure of Rs. 75,000 is at the moment being undertaken at our Mills.

We have a further liability of approximately Rs. 1 lakh to complete our entire scheme before our Mills can undertake the manufacture of bamboo pulp in substantial quantities.

The Company has in the meantime undertaken certain experimental work in connection with preparation of Bamboo pulp and is satisfied that, with suitable preparing plant of the nature now being installed, a pulp of the right quality for its paper can be secured.

Investigations have been made in connection with the supplies of the raw bamboo required and negotiations are in progress with the Government Forest Department for areas which will be sufficient to meet our entire requirements of bamboo, and which will bring in, to Government increased revenues.

From the above you will realise a considerable amount of time and money was necessary to put into operation what is an entirely new process as far as this Company is concerned.

In connection with the question as to the desirability of continuing the protection measures to the paper industry, this Company is of the opinion that such further protection should be granted to enable the industry to develop itself on the lines originally laid down by the Tariff Board, and if such protection is not granted there is every likelihood of past difficulties again having to be faced, but of a more intense nature.

The importance of the industry to the nation is apparent to all and we need hardly remind the Board that not only the desirability but the necessity of the Paper Mills in this country was proved conclusively during the difficult times of 1914-19.

Foreign competition is again being experienced in a most acute form, and cases are reported where advantage is being taken of the Indian market to place supplies of paper at prices representing manufacturers' cost or below. The object of this policy enables the manufacturers to maintain a higher level of prices in their home markets with no likelihood of disturbance from such a distant market as India.

Since the last Tariff report, phenomenal reductions in prices of wood pulp have taken place, this raw material being the one almost entirely used in the manufacture of the imported papers referred to.

In 1925 the price of a medium quality Easy Bleaching Wood Pulp was approximately £15-10 per ton and the same quality can to-day be secured at £10-10 per ton. These prices are c.i.f. Indian Ports. For the less well-known brands prices being quoted are £9-7-6 per ton c.i.f. Indian Ports.

It will be appreciated that a raw material available at the above prices at the doors of the English and Continental Paper Mills, enables them to secure such advantages that they are in a position to quote prices for paper which are from £7 to £8 per ton lower than those ruling for the same qualities in 1925. If these papers are allowed to come on to the Indian market without the protection at present extended to the Indian Paper Mills this policy will mean that the heavy sums of money spent by most of the Indian Mills during the past six years on plant for the manufacture of Bamboo pulp will become unproductive, and through the large losses bound to be incurred bring the Paper industry to a standstill.

The present decline in the prices of imported papers of competitive qualities to those manufactured by the Indian Paper Mills represents approximately 25 per cent., and in view of the Indian raw materials, Sabai grass and raw bamboo, etc., showing only small reductions in prime cost we consider it necessary that the industry for some time to come should receive additional protection over and above the anna 1 per lb. at present in operation.

We trust the Board will give our views put forth in these advices their very serious consideration, and we will be pleased to give fuller particulars of the working of our Mill if called upon to do so.

We will further be glad to present ourselves before the Board to furnish any explanation they may desire.

(2) *Replies to questionnaire, dated 20th June, 1931, received from the Bengal Paper Mill Company, Limited, Calcutta.*

1. (a) The Bengal Paper Mill Company, Limited, is a Public Registered Company—Established in 1889.

(b) Registered in India. Rupee capital as follows:—

Ordinary Shares, Rs. 9,00,000 of Rs. 25 each.

7 per cent. Cum. Preference Shares, Rs. 2,00,000 of Rs. 50 each.

7 per cent. A Cum. Preference Shares (issued in 1928), Rs. 4,00,000 of Rs. 100 each.

(c) Indian shareholders registered in the Company's share register :—

Ordinary Shares, 43 per cent., value Rs. 3,87,000.

7 per cent. Cum. Preference Shares, 58 per cent., value Rs. 1,16,000.

7 per cent. A Cum. Preference Shares, 25½ per cent., value Rs. 1,02,000.

(d) There is one Indian and four British Directors. There are no Indians on the Superior Management of the Mill.

One British Director, who has had 28 years service with the Company, has recently joined the Board.

The Indian shareholders' holdings in the Company in 1924 were 33 per cent., to-day their holdings are 40 per cent.

2. The average full capacity of our Mills is at present 850 tons monthly, of Paper.

Owing to the introduction of Bamboo Pulp, we are not in a position at present to state the full capacity of Pulp manufacture at our Mills.

3. The actual output of Pulp and Paper from the Mills from 1924 is as follows :—

	Pulp.	Paper.
	Tons.	Tons.
1924	3,912	6,349
1925	3,136	6,359
1926	4,141	8,291
1927	3,985	8,730
1928	3,963	9,173
1929	3,696	9,092
1930	3,743	9,218

4. The chief classes of papers manufactured in our Mills are :—

White Printings.	Blottings.
Cream Laid and Woves.	Antique Laid and Woves.
Semi Bleached.	Coloured Printings.
Superior Badami.	Banks and Bonds.
Common Badami.	Azure Laid and Woves.
White Cartridge.	Brown Wrappings.

The average percentage of each of the above qualities manufactured is as follows :—

	Per cent.
White Printings	39·83
Cream Laid and Woves	11·84
Semi Bleached	6·71
Superior Badami	2·65
Common Badami	11·90
White and Coloured Cartridge	3·53
Blottings	1·71
Antique Laid and Woves	1·00
Coloured Printings	0·17
Banks and Bonds	0·42
Azure Laid and Woves	0·99
Brown Wrappings	18·13

5. Our consumption of the primary materials has been as follows:—

	1924.	1925.	1926.	1927.	1928.	1929.	1930.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Grass . . .	8,096	7,289	8,412	8,443	7,050	7,227	6,889
Wood Pulp . .	2,028	2,713	3,900	4,280	4,863	5,450	5,573
Bamboo . . .	...	...	...	...	2	19	39
Hemp . . .	392	222	106	...	...	...	223
Jute . . .	953	496	452	513	624	93	12
Canvas . . .	8	7	79	25	31	5	14
Rags . . .	262	117	19	64	17	7	3
Waste Papers .	789	968	1,366	1,521	1,934	1,354	1,413
English Clay .	607	1,043	723	1,131	1,395	894	889
Indian and Yellow Clay .	870	666	989	510	443	464	350

6. The quantity of primary raw materials required for one ton of Pulp and one ton of paper is as follows:—

	Per ton of Pulp.	Per ton of Paper.
	T. C. Qr. Lb.	T. C. Qr. Lb.
Grass	2 3 2 0	2 7 2 13
Bamboo	2 5 1 22	2 10 0 0
Jute	1 17 0 4	2 0 0 0
Hemp	1 8 3 26	1 10 3 2
Rags No. 1	1 6 2 13	1 8 2 8
E. B. Pulp	1 2 0 25	1 3 2 3
Bleached Pulp . . . . .	...	1 2 0 25
Strong Pulp . . . . .	...	1 2 0 25
Waste Paper . . . . .	...	1 16 1 12

In our figures given for primary material required for one ton of pulp, allowance has been made for manufacturing and bleaching losses up to the stage of Bleached Pulp. When converting this pulp into paper, the extra quantity called for represents mechanical and/or moisture losses. We would further mention that our Bamboo figures should be accepted with reserve as our experiments have not been on a sufficiently large scale to be conclusive.

7. We are still of the opinion that there are ample supplies of primary materials available in India of suitable quality for paper making purposes, and although this Company has not been able to make as much use of the above materials as other Paper Mills, it is largely a question of sufficiency of plant to deal with the indigenous material. The position we are gradually rectifying.

8. (a) There has been no substantial change in the sources from which our Primary Materials are secured.

(b) Methods of collection and transport of grass remain unchanged.

(c) We have not worked in our own name the Government grass concessions in the Singhbhum Division for the past two years.

Our lease expired in 1928, when it was decided by Government to allow the local Mankis to work the areas, and from whom we now secure our requirements under contract.

The areas in Chota Nagpur and Ramnagar have been worked by the Company on the same basis of Royalty as previously reported.

9. We give below the Company's working costs per ton of grass delivered to the Mills.

It is not possible to submit Contractors' costs for supplies accepted under contract.

(1) *Ramnagar Field.*

	1923-24.	1924-25.
	Per ton of Grass.	Per ton of Grass.
	Rs. A. P.	Rs. A. P.
Cutting, Carting and Baling .	22 15 3	23 12 9
Railway freight	15 3 9	16 0 0
Rent or Royalty	24 5 9	16 14 0
Other charges	3 15 3	4 3 6
	<u>66 8 0</u>	<u>60 14 3</u>

	1925-26.	1926-27.
	Per ton of Grass.	Per ton of Grass.
	Rs. A. P.	Rs. A. P.
Cutting, Carting and Baling .	22 14 3	22 13 9
Railway freight	16 0 0	16 0 3
Rent or Royalty	13 8 0	12 11 0
Other charges	3 10 6	4 6 0
	<u>56 0 9</u>	<u>55 15 0</u>

	1927-28.	1928-29.
	Per ton of Grass.	Per ton of Grass.
	Rs. A. P.	Rs. A. P.
Cutting, Carting and Baling .	21 15 9	21 4 3
Railway freight	15 3 0	13 8 9
Rent or Royalty	12 2 0	12 11 0
Other charges	3 0 0	3 0 3
	<u>52 4 9</u>	<u>50 8 3</u>

	1929-30.	1930-31.
	Per ton of Grass.	Per ton of Grass.
	Rs. A. P.	Rs. A. P.
Cutting, Carting and Baling .	21 2 3	20 6 3
Railway freight	13 8 0	13 2 6
Rent or Royalty	15 0 0	12 11 0
Other charges	3 8 0	3 7 0
	<u>53 2 3</u>	<u>49 10 9</u>

(2) Nagpur Field.

	1923-24.	1924-25.
	Per ton of Grass.	Per ton of Grass.
	Rs. A. P.	Rs. A. P.
Cutting, Carting and Baling .	31 8 0	34 1 0
Railway freight	9 4 6	10 2 0
Rent or Royalty	12 3 9	10 10 7
Other charges	3 13 3	3 8 2
	<hr/> 56 13 6 <hr/>	<hr/> 58 5 9 <hr/>
	1925-26.	1926-27.
	Per ton of Grass.	Per ton of Grass.
	Rs. A. P.	Rs. A. P.
Cutting, Carting and Baling .	29 12 9	27 4 0
Railway freight	9 4 6	9 4 6
Rent or Royalty	8 6 6	9 12 3
Other charges	2 5 9	2 15 6
	<hr/> 49 13 6 <hr/>	<hr/> 49 4 3 <hr/>
	1927-28.	1928-29.
	Per ton of Grass.	Per ton of Grass.
	Rs. A. P.	Rs. A. P.
Cutting, Carting and Baling .	28 15 3	28 4 3
Railway freight	9 4 6	8 3 5
Rent or Royalty	13 14 9	9 9 1
Other charges	5 5 3	1 7 0
	<hr/> 57 5 9 <hr/>	<hr/> 47 7 9 <hr/>
	1929-30.	1930-31.
	Per ton of Grass.	Per ton of Grass.
	Rs. A. P.	Rs. A. P.
Cutting, Carting and Baling .	27 8 0	28 14 11
Railway freight	9 7 7	9 4 6
Rent or Royalty	12 6 10	5 1 7
Other charges	3 4 10	1 8 11
	<hr/> 52 11 3 <hr/>	<hr/> 44 13 11 <hr/>

10. We consider the Railway freights offered to the Industry are reasonable for the large traffic carried. Concessions in freight were given in 1925.

11. We regret that we are unable to deal with this question in the manner which we feel would be of greatest value and assistance to the Board.

The success of our attempts to manufacture pure white pulp from Bamboo have been somewhat qualified owing to our inability to sufficiently crush the raw material with our lightly designed experimental crusher. The complete disintegration of the nodes has proved to be our principal difficulty and has obstructed complete digestion, resulting in dark brown specks in the pulp which would not respond readily to economical bleaching.

Our original experiments were made very largely without regard to chemical consumption as it was our endeavour to find the most satisfactory method of producing a quality of Bamboo Pulp suitable for our requirements. We have gradually been able to reduce the consumption of chemicals and our most successful results have been obtained in spherical boilers, and by the utilization of the sodium-sulphide process.

Having traced our principal difficulties to our inability to completely crush the raw bamboo, the manufacture by us of bamboo pulp has been delayed until we receive delivery of the crushing plant which has been specially designed and constructed upon the data we have been able to secure from the operations conducted on our small crusher. We have also been on constant and close consultation with our Home experts and have benefited by their extensive experience in the manufacture of such heavy and costly plant.

As soon as the new crusher is in operation we hope to be able to proceed with the manufacture of bamboo pulp on a commercial scale.

(A) As already indicated, our best cookings have been obtained by direct boiling in spherical digesters under a steam pressure of 45 lbs. per square inch for 10 hours. The consumption of (1) Sodium Sulphide being 6.25 per cent. (77 per cent. Na_2S) and (2) Caustic Soda 12.5 per cent. (77 per cent. Na_2O). The pulp thus produced was clean and soft and the bleach consumption 15 per cent. Standard Bleaching Powder on the dry weight of the unbleached pulp. Although this figure is much lower than we have been able to bleach with upon previous occasions, yet we consider it still too high to be economical.

(B) The cost of Bamboo from our own Government Concession forest at Sambalpur works out at Rs. 32 to Rs. 34 per ton delivered our Ranigunj Paper Mill siding. This cost is not on a bone dry basis. We have received offers from Contractors to supply Bamboo delivered our Ranigunj Paper Mill siding at Rs. 27 per ton bone dry.

(C, D & E) These questions can only be satisfactorily answered after large scale working with suitably crushed Bamboo. We believe, however, that our chemical costs can be reduced but it is impossible at this stage to suggest to what extent.

(F) The following are the modifications and additions to our plant which were specially undertaken for the manufacture of Bamboo Pulps:—

- (1) Arrangements for the ample supply of steam for cooking.
- (2) Arrangements for the supply of electrical power for driving, crushing, elevating, bleaching and straining plant.
- (3) Bamboo Crusher, elevator, Straining Plant, Bleaching Towers, Circulating Pumps and Piping, and White Straining Plant with auxiliaries.
- (4) Suitable storage for Bamboos.

(G) The total expenditure incurred under the above head has been Rs. 4,15,710.

(H) The capacity of the new crusher is approximately 300 tons per month working day shift only. This, therefore, can be doubled by working the plant 24 hours per day.

(I) The total output of Bamboo Pulp for 1929—8 tons.

The total output of Bamboo Pulp for 1930—16 tons.

(J) The Company has entered into an arrangement with the Bihar and Orissa Government for a ten years' lease with an option of a further ten years' lease of the Bamboo Forests at Sambalpur, West Division. These Forests are of a very extensive character and can meet our entire requirements. From this it is seen that the Company's supplies of raw Bamboo are amply guaranteed.

12. The quantities of Pulp imported from 1924 to 1930 are as follows:—

	1924.	1925.	1926.	1927.	1928.	1929.	1930.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Easy Bleaching Pulp .	1,152	1,751	2,448	2,850	3,186	3,892	3,714
Bleached Pulp.	785	962	1,175	1,036	1,060	1,072	926
Strong Pulp .	...	...	253	369	577	448	915
Mechanical Pulp.	91	...	24	25	40	38	18
	<u>2,028</u>	<u>2,713</u>	<u>3,900</u>	<u>4,280</u>	<u>4,863</u>	<u>5,450</u>	<u>5,573</u>

Imported from:—

Easy Bleaching	}	Norway, Sweden and America.
Bleached		
Strong		
Mechanical		Sweden.

We do not limit ourselves to any one country for any particular quality, but purchase in the cheapest market. From America we have been able to secure Easy Bleaching Sulphite Pulp at £9-7-6 per ton c.i.f. Calcutta.

We give below further details called for, but regret with the exception of years 1929 and 1930, we are unable to furnish freight charges. In the year 1924 Freight and Insurance on Pulp from Gothenburg were £1-3-9 per ton.

Quantity.	C.i.f. Price per ton.	Port of Embarkation.	Insurance, etc., per ton.	Landing Charges, etc., per ton.	Railway freight to Mill per ton.
1924	£ s. d.		£ s. d.	Rs.	Rs. A. P.
Easy Bleaching Pulp .	15 3 9	Gothenburg	1 3 9	4	7 11 9
Bleached Pulp . . .	17 17 6	Hang.	Not known.	4	7 11 9
Strong Pulp	Nil	Nil	Nil	Nil	Nil
Mechanical Pulp . .	10 10 0	Oslo	Not known.	4	7 11 9
1925.					
Easy Bleaching Pulp .	14 16 3	Oslo	Not known.	4	4 10 0
Bleached Pulp . . .	18 13 9	„	„	4	4 10 0
Strong Pulp	15 6 0	Gothenburg	„	4	4 10 0
Mechanical Pulp . .	9 15 0	„	„	4	4 10 0

Quantity.	C.i.f. Price per ton.	Port of Embarka- tion.	Insurance, etc., per ton.	Landing Charges, etc., per ton.	Railway freight to Mill per ton,
1926.	£ s. d.		£ s. d.	Rs.	Rs. A. P.
Easy Bleaching Pulp .	16 0 0	Oslo	Not known	4	4 10 0
Bleached Pulp . .	19 7 6	„	„	4	4 10 0
Strong Pulp . . .	15 0 0	Gothenburg	„	4	4 10 0
Mechanical Pulp . .	9 16 6	Oslo	„	4	4 10 0
1927.					
Easy Bleaching Pulp .	15 4 0	Oslo	0 1 1	4	4 10 0
Bleached Pulp . . .	17 7 6	„	0 1 3	4	4 10 0
Strong Pulp . . .	14 7 6	Gothenburg	0 1 2	4	4 10 0
Mechanical Pulp . .	9 16 6	Oslo	0 1 2	4	4 10 0
1928.					
Easy Bleaching Pulp .	13 10 0	Wiborg	0 1 0	4	4 10 0
Bleached Pulp . . .	15 17 6	Oslo	0 1 2	4	4 10 0
Bleached Pulp . . .	19 12 0	Norfolk, Va	0 1 10	4	4 10 0
Strong Pulp . . .	11 2 6	Rauma	0 0 10	4	4 10 0
Mechanical Pulp . .	7 15 0	Gothenburg	0 0 6	4	4 10 0
1929.					
Easy Bleaching Pulp .	13 9 0	Oslo	0 1 0	4	4 10 0
Bleached Pulp . . .	17 2 6	Jofte	0 1 3	4	4 10 0
Bleached Pulp . . .	19 5 0	Norfolk, Va	0 1 10	4	4 10 0
Strong Pulp . . .	12 0 0	Mantybroto	0 1 2	4	4 10 0
Mechanical Pulp . .	8 4 6	Gothenburg	0 0 7	4	4 10 0
1930.					
Easy Bleaching Pulp .	13 0 0	Oslo	0 1 0	4	4 10 0
Easy Bleaching Pulp .	12 5 0	Norfolk, Va	0 1 5	4	4 10 0
Bleached Pulp . . .	15 10 0	Mantybroto	0 1 6	4	4 10 0
Bleached Pulp . . .	18 17 6	Norfolk, Va	0 1 10	4	4 10 0
Strong Pulp . . .	12 7 6	Kotka	0 0 10	4	4 10 0
Strong Pulp . . .	8 15 0	Norfolk, Va	0 1 1	4	4 10 0
Mechanical Pulp . .	7 19 0	Gothenburg	0 0 8	4	4 10 0

We understand the steamer freight from Norway and Sweden to Calcutta, for 1930-31, is Rs. 35 per ton.

During the early part of 1931, prices have still declined further, and requirements can be secured at the following prices:—

	Ton. c.i.f. Calcutta. £ s. d.
Easy Bleaching Pulp	10 10 0
Easy Bleaching Pulp	9 7 6
Bleached Pulp	12 10 0
Strong Pulp	10 2 6
Strong Pulp	8 15 0

13. The considerable increase in wood pulp consumption shown in the figures given, corresponds with the larger output from the Mills.

The preparing plant for indigenous primary materials has been in constant employment, and any fluctuations that have taken place in our Sabai grass consumption are due to seasonal variations of cutturn from the Forests producing this commodity.

With the Bamboo Pulp plant coming into operation, reductions in Wood pulp consumption will automatically take place.

14. It is not possible at the moment to give a definite minimum quantity figure of our imported Wood Pulp requirements. Providing our Bamboo pulp plant comes up to our expectations, and we are able to work it to the full capacity on an economical basis, our minimum imported Wood Pulp requirements should be 150 tons monthly.

It is possible that this quantity of Wood Pulp will in due course be replaced by Bamboo Pulp from a Company manufacturing in the Country.

Supplies of Imported Wood Pulp have been, and will always be, required to maintain and secure output, and also to allow our Mills to work on the most economical level.

15. Prices of Imported Wood Pulp in 1926 show a small increase above the years 1924 and 1925. From the year 1927 prices have gradually dropped until 1930, largely accounted for by the expansion and consequent over-production of the Wood Pulp manufacturing industry. Towards the latter end of 1930, prices fell rapidly, due to the general trade depression, and in conjunction with the over-production by the Pulp Mills.

It is thought that when the Paper Trade improves and demands increase, prices of Wood Pulp are likely to have an upward tendency.

16. Our manufacture continues on the same general lines as in 1923-24. The demands made by the Jute Mills for old and torn gunny, increased the market price to such an extent as to prohibit its use for Badami and Brown Wrapping papers. This material was replaced by imported strong wood pulp, which we hope in turn will be replaced by Bamboo pulp as soon as our plant comes into operation.

Experiments have been made on a small scale with Bamboo for Badami and Brown papers, which give promise of satisfactory results.

(A) Our Works costs are given in Statement 2, and as all our papers contain a proportion of imported wood pulp we are unable to confine ourselves to costs for manufacture of paper from indigenous material other than Bamboo.

(B) The trend of qualities is towards a general improvement, and increases in tonnage have been registered under the heads of Writings, Banks, Blottings, Duplicatings, and high class Printings.

(C) Output Statement is given herewith.

Qualities of Papers.

Quality.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
White Printing . . .	2,438½	2,870½	3,243½	3,092½	3,350	3,896½	3,699½
Cream Laid and Wove .	258	354	699¾	825¼	1,000¼	985¾	1,131¼
Brown	828¾	768¾	849¼	1,075	1,454	1,067½	1,100¾
Badami	915¾	708	994½	1,149¾	1,486	782¾	1,004½
Unbleached	809	675½	1,236	1,190¾	305	828½	682¾
Mill Wrapper	214¾	211½	348½	334¾	433	465½	442
W. H. B.	263¾	277½	250	167¼	173½	222¾	308½
White and Buff Cartridge .	225½	290	331	348¾	422½	374¼	233½
Azure Laid and Wove .	238¾	153	120	219	85¾	54¾	124½
Antique Laid and Wove .	25	¾	88	23	118¾	98¾	58
White and Coloured Blotting.	15¼	½	20	125¾	143¼	146	187¼
White and Coloured Banks.	9	9	20¼	48¾	46½	7	62¼
White and Coloured Pulp Boards.	4½	10½	9	66¼	37	29	25
White and Coloured Duplicating.	...	...	1¼	23¾	88¾	106¾	131¾
Coloured Printing . . .	19¾	...	51½	17¾	28½	10½	26¼
Typewriting . . . .	...	13¼	29¼	22¼	¾	¼	...
Stamp Paper	82¾	17¼	...	...	...	...	...
Total	6,849	6,860	8,291	8,730¼	9,173½	9,091¼	9,218

17. The quantity of auxiliary materials required for one ton of paper produced is as follows:—

	Quantity required.	Price per ton.
	Tons.	Rs. A.
Caustic	·033	243 12
Alkali	·003	130 1
Lime	·188	22 9
Bleach	·103	124 1
Rosin	·018	333 7
Alum	·036	87 3
English China Clay	·134	72 13
Indian China Clay	·129	50 0
Yellow Clay	·035	50 0
Dyes	·0004	3,590 0

18. The auxiliary material which is more readily available in India since 1924 is China Clay, but owing to the varying quality, has to be used with considerable care.

With our proposed new clay plant, we intend incorporating adequate straining devices which will enable us to make use of only Indian China Clay.

Caustic Soda and Alkali are no longer manufactured in the country for sale, and have, with bleaching powder and part of our China Clay requirements, to be imported.

Supplies of Rosin, Lime, Yellow Ochre, are of country origin.

We hope, in the near future, to secure our requirements of Alum from local manufacturers.

19.

FORM III.

Material.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Grass . { Used . . .	8,096	7,289	8,412	8,443	7,050	7,227	6,889
{ Paper made .	2,626	2,280	3,195	3,007	2,740	3,019	2,918
Bamboo { Used . . .	...	...	...	...	2	19	39
{ Paper made .	...	...	...	...	$\frac{3}{4}$	8	16
Other Local { Used . . .	2,404	1,810	2,022	2,123	2,606	1,459	1,665
Fibres. { Paper made .	1,286	856	946	978	1,223	669	809
Total Indi- { Used . . .	10,500	9,099	10,434	10,566	9,658	8,705	8,593
genous { Paper made .	3,912	3,136	4,141	3,985	3,963 $\frac{1}{2}$	3,696	3,743
Imported { Used . . .	2,028	2,718	3,900	4,280	4,863	5,450	5,573
Pulp. { Paper made .	1,725	2,332	3,321	3,864	4,194	4,672	4,801
Imported { Used . . .	607	1,043	723	1,131	1,395	894	889
China Clay. { Paper made .	348	625	434	677	838	537	534
Indian { Used . . .	870	666	989	510	443	464	350
China Clay. { Paper made .	364	266	395	204	177	186	140
Other Aux- { Used . . .	3,139 $\frac{1}{2}$	2,875	3,230	3,416 $\frac{3}{4}$	2,735 $\frac{1}{2}$	3,084 $\frac{1}{2}$	2,788 $\frac{1}{2}$
liary Mate- { Paper made .	...	...	...	...	...	...	...
rials.							
Total Quantity Materials Used.	17,144 $\frac{1}{2}$	16,396	19,726	19,903 $\frac{3}{4}$	19,094 $\frac{1}{2}$	18,597 $\frac{3}{4}$	18,193 $\frac{1}{2}$
Total Paper made . . .	6,349	6,359	8,291	8,730	9,172 $\frac{1}{2}$	9,092	9,218

20. Total labour force employed for the past seven years is as follows:—

(A) Extraction and collection of primary raw material:—

1924.	1925.	1926.	1927.	1928.	1929.	1930
8,000	8,900	8,450	8,450	8,000	7,800	7,800

(B) Labour force at Mills:—

1924.	1925.	1926.	1927.	1928.	1929.	1930.
1,230	1,238	1,341	1,361	1,411	1,454	1,402

NOTE.—Our labour force for the collection of bamboo for Sambalpur Forest will be approximately 1,000 hands.

21. We give below the expenditure in wages for the collection of Sabai grass under our supervision. We are unable to give a figure for wages incurred in the collection of other Primary Materials, which are secured from Contractors:—

(A) On Grass:—

	1923-24.			1924-25.			1925-26.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Ramnagar . . .	49,906	6	0	75,053	11	0	89,418	14	0
Nagpur . . .	1,10,136	8	0	1,35,597	0	6	1,43,634	12	3
	1,60,042	14	0	2,10,650	11	6	2,33,053	10	3

	1926-27.			1927-28.			1928-29.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Ramnagar . . .	97,328	1	0	93,860	10	0	85,458	0	0
Nagpur . . .	1,17,220	2	6	94,196	11	6	99,455	0	0
	2,14,548	3	6	1,88,057	5	6	1,84,913	0	0

	1929-30.			1930-31.		
	Rs.	A.	P.	Rs.	A.	P.
Ramnagar . . .	74,420	9	0	84,861	15	6
Nagpur . . .	44,248	2	0	47,592	9	0
	1,18,668	11	0	1,32,454	8	6

For the last two years considerable grass supplies were received through Contractors.

(B) Total mill labour :—

1925.			1926.			1927.		
Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
2,81,489	14	0	3,19,314	11	6	3,17,856	8	6
1928.			1929.			1930.		
Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
3,25,587	0	0	3,43,259	5	9	3,50,903	11	3

22. We have found it possible to substitute the European Chemist by an Indian Chemist, whose work we find entirely satisfactory. We are training in the laboratory two young assistants who also show much promise.

We have under training in the actual Papermaking Departments two Indian and two Anglo-Indian apprentices, and we optimistically hope that these youths will be able to take up, at the conclusion of their training, senior appointments in the mill.

The company is anxious to add to the numbers of its apprentices, but on account of the arduous nature of the work, have experienced considerable difficulty in securing the right type of young Indians and inducing them to complete the period of indenture.

We find that the training in the Mechanical Branches of our mill appeals more readily to the inclinations of the Indian youths, and there are always a number waiting for an opportunity to receive training.

At present we are undertaking the training of :—

7 in the Electrical Department.

6 in the Engineering Department for Paper Mill Maintenance work, on Paper Machines and Beaters.

10 in the Engineering Shops.

Many of these youths have displayed considerable ability and it is the intention of the company, where possible, to make use of their services in positions at present filled by imported labour.

23. In 1929 we erected a small club for the use of our Indian staff. This consists of a pucca brick building with a lime concrete roof, and having a main room of 28' 0" long x 13' 0" wide x 12' 0" high, fitted with two doors and three windows. A verandah 7' 6" wide and tiled with Burn & Co.'s special roofing tiles, runs along two sides of the building. Adjoining the club is an open space which has been made over for the use of the Indian staff, and during the season is taken up for Badminton Courts, etc.

The Dispensary and the Hospital, under the charge of Dr. Ghose and a qualified Compounder, deal with all cases of sickness or accident among our Indian staff and their families. This attention is of course supplied free, with medicine, the annual expense being very considerable. The doctor regularly visits our Dhowrahs. In the Hospital we are able to deal successfully with almost all common tropical complaints, and it has been equipped with all the necessary Surgical Instruments, together with Cholera treatment apparatus and an Oxygen Inhaler. We treat in our Dispensary, on an average, 1,600 patients per annum.

Whilst this social work is primarily intended for our own employees, yet we frequently extend its scope of operation to include the inhabitants of the nearby villages. At the moment we are co-operating with the

Mines Board of Health with a view to reducing the number of Malarial fever cases.

We have been negotiating to secure the services of one certified Midwife to attend to the ailments of our female labour.

For some years past, the company has permitted and encouraged the employees and their friends to make use of a portion of its Maidan for games and football.

In view of the keenness recently displayed and the advantage taken of the facilities already mentioned, we have after completion of the water storage and cooling tanks, cleared and allocated a more suitable site for the use of the Indian labour.

In 1929, we successfully sank three tube wells, and water from these is supplied to each block of cooly lines, a service which has been greatly appreciated by our own workers and outsiders from the nearby villages. We have been encouraged to extend the area of supply.

The following quarters have been built for the better accommodation of our Indian staff:—

Apprentices' Quarters.—Brief specification:—Two bedrooms, 12' 0" × 16' 0" × 11' 6" high, with a bathroom attached to each. One sitting room, 12' 0" × 16' 0" × 11' 6" high, and a verandah 8' 0" wide × 37' 0" long on one side. The quarters are complete with cook house, servants godown and latrines; all being enclosed in a compound wall. Each room has two windows and a door fitted with skylight ventilators at the top. The walls are of 15" pucca brick work and the verandah is tiled with Burn's special tiles.

Babus' Bachelor Quarters.—Six rooms 10' 0" × 16' 0" × 11' 6", built of 15" pucca brick work with lime soorkee concrete roofs and pucca cement floors, one door and two windows are fitted to each room. A verandah 7' 0" wide and 48' 0" long, roofed with Burn's tiles, runs along the two sides of the quarters, and two bathrooms are placed at each end of the verandah. Two cook houses and two latrines are built within the compound wall, which surrounds the quarters.

Chemist Babu's Quarters.—Two rooms, 12' 2" × 14' 11" high and 12' 2" × 9' 10" and 11' 0" high, respectively, built in pucca brick, roof of lime soorkee concrete, and pucca cement floor, each having one door and two windows. A tiled verandah 8' 0" wide and 24' 0" long on one side of the room, and enclosed within a compound wall, and a cook house, latrine and bathroom.

New Khalasi, Durwan and Cooly Lines.—Two lines have been built for accommodating durwans. One line with three rooms 19' 0" × 9' 0" × 11' 0" high and tiled roofs, cement floors and a verandah, and the other line with six rooms 9' 0" × 8' 0" × 10' 0" high, also with tiled roof and cement floor and a small tiled verandah.

Two quarters have been built for the khalasies, one with three rooms, 10' 0" × 15' 0" × 10' 0" high, and 18" brick work, and tiled roofs, and the other with three rooms each 13' 0" × 10' 0" × 10' 0" high with 15" brick wall, with cement floors and tiled roofs, each room having two doors. A verandah 6' 0" wide and tiled with Burn's tiles runs along one side of the quarters, the other side having a walled enclosure built on.

Six of our cooly lines with 12 rooms to each have been reconstructed. The height of the rooms has been increased and a new Burn's tiled roof fitted on and this has been constructed to provide a small verandah on each side of the line.

In view of the proximity of the Mills to several villages, from which we draw a large local labour force, it has only been found necessary to provide accommodation for the up-country workers.

The company assists, by means of a regular monthly contribution, the local educational institution, and when the Raniganj town water scheme was introduced, made a donation towards it of Rs. 20,000.

24. We have, during the past five years, made extensive alterations to our steam raising and power plant. These are detailed more fully in our reply to question No. 38.

We have considerably increased our use of electrical energy, on account of its conveniences, adaptability and economical advantages, and have installed 41 new motors representing 1,230 H. P.

One of the most important improvements undertaken at our mills has been the installation of a 1,100 K. W. Pass out Steam Turbine at a working pressure of 200 lbs. From this turbine process steam for boiling raw materials is extracted at 55 lbs., pressure after producing the requisite electrical energy. The modernised steam and power plant has enabled us to effect considerable economies.

Our average cost of coal has gradually been reduced and stands to-day at Rs. 3 per ton. Our consumption of coal is 3.5 tons per ton of paper. We have every confidence that this figure will be further reduced with the completion of our improvement scheme.

25. The total Indian production is approximately 41,000 tons.

The Indian demand, along with the various Government requirements, for papers of all kinds, including Straw, Paste and Pulp Boards, but excluding "Paper Manufactures", was, in the 12 months 1929-30, 180,369 tons.

We have accepted 1929-30 figures of imports as more representative of the average tonnage of paper consumed in the country, although 1930-31 show a considerable reduction which we consider of a temporary nature.

Of this quantity we need to eliminate News Printing and Old Newspapers with a total tonnage of 69,543 tons, leaving, in our estimation, after allowing for 41,000 tons made by Indian Mills, at least a minimum of 20,000 tons of paper and boards that could, if suitable plant were installed, be manufactured in India.

One of the immediate fields for investigation is the manufacture of the packing papers largely imported, and composed of qualities known as Kraft and Imitation Kraft papers. We believe there is every possibility of the Indian Paper Mills being able to produce a suitable paper to meet local demands.

In the Punjab two projects are in hand for the manufacture of Straw Boards which, with encouragement and assistance for a limited period would, we feel sure, bring into existence a flourishing enterprise.

26. Although the largest Indian Paper Mills are at present manufacturing Bamboo Pulp, or are preparing to manufacture the same, we still believe there will always be room for an Indian Company who will solely devote themselves to its manufacture.

Such a company producing 30,000 tons annually, would receive substantial support from Indian Paper Mills, and after their requirements were met, the balance would be available for export.

27. So long as the use of woodpulp is a necessity to the paper industry, we do not consider an import duty on the commodity should be levied. We feel it would be detrimental to the interests of the country, and retard the expansion of paper manufacture, which must in the natural course of events expand with the country's needs, as education and commerce advance.

It is possible that, at some future date, when the paper mills are fully equipped for the manufacture of their own bamboo pulp requirements, or they can secure their supplies in the country from established bamboo pulp factories, a duty on wood pulp as a safeguard to such bamboo pulp and paper concerns would have advantages.

28. The following represent to-day's quotations for imported papers, and have been secured locally:—

Quality.	Country of Origin.	Price per ton C. I. F. & C. I. Calcutta.	@ 1/5 $\frac{1}{2}$ Exchange.	Port Commissioner Charges Port Dues, Landing Charges per ton.	Cartage to Godown per ton.	Duty per ton.	Landed Price per ton.	Landed Price per lb.
		£ s. d.	Rs. A. P.	Rs. A. P.	Rs.	Rs. A. P.	Rs. A. P.	A. P.
Glazed Wood—Free—								
Printing	Sweden	21 10 0	290 11 3	2 13 9	3	140 0 0	436 9 0	3 1-42
Do.	Do.	24 0 0	324 8 1	2 13 9	3	140 0 0	470 5 10	3 4-32
Do.	Do.	26 15 0	361 11 0	2 13 9	3	140 0 0	507 8 9	3 7-50
Cream Laid	Continental	26 10 0	358 0 11	2 13 9	3	140 0 0	503 14 8	3 7-19
Antique Wove	England	31 10 0	425 14 7	2 13 9	3	140 0 0	571 12 4	4 1-01
„ Laid	Continental	27 10 0	371 13 3	2 13 9	3	140 0 0	517 11 0	3 8-37
Un glazed White Bank 20 x 30, 12 $\frac{1}{2}$ lbs.	Sweden	37 0 0	500 4 6	2 13 9	3	140 0 0	646 2 3	4 7-38
Coloured—								
Un glazed News Yellow, 19 lbs.	Do.	18 12 6	251 13 2	2 13 9	3	51 3 2	308 14 1	2 2-42
Orange, 19 lbs.	Do.	19 12 6	265 5 6	2 13 9	3	51 3 2	322 6 5	2 3-63
„ 22 lbs.	Do.	17 0 0	223 13 8	2 13 9	3	51 3 2	286 14 7	2 0-59
„ 34 lbs.	Do.	15 0 0	202 13 0	2 13 9	3	51 3 2 (Duty 20% on Rs. 256 per ton.)	259 13 11	1 10-27

The un glazed coloured news is a competitive paper to the Indian Mills Common Badami.

29.

From Raneegunge.

Station.	Distance.	Rate per maund per mile (small lots).	Rate per maund per mile (wagon loads).
		Pies.	Pies.
Patna	217	0-21	0-18
Benares	308	0-23	0-19
Allahabad	391	0-18	0-15
Lucknow	495	0-18	0-16
Cawnpore	510	0-18	0-15
Agra	668	0-18	0-15
Delhi	781	0-17	0-15
Amritsar	1,022	0-23	0-20
Lahore	1,055	0-23	0-21

From Calcutta Port.

Patna	338	0-44	0-44
Benares	429	0-44	0-44
Allahabad	512	0-44	0-38
Lucknow	616	0-58	0-31
Cawnpore	631	0-57	0-31
Agra	789	0-39	0-24
Delhi	902	0-34	0-21
Amritsar	1,143	0-35	0-24
Lahore	1,176	0-34	0-24

From Bombay Port.

Patna . . . . .	...	...	...
Benares . . . . .	...	...	...
Allahabad . . . . .	...	...	...
Lucknow . . . . .	...	...	...
Cawnpore . . . . .	...	...	...
Agra	835	0-37	0-23
Delhi	957	0-32	0-20
Amritsar . . . . .	...	...	...
Lahore . . . . .	...	...	...

From Karachi Port.

Patna . . . . .	...	...	...
Benares . . . . .	...	...	...
Allahabad . . . . .	...	...	...
Lucknow . . . . .	...	...	...
Cawnpore . . . . .	...	...	...
Agra . . . . .	...	...	...
Delhi . . . . .	...	...	...
Amritsar	786	0-39	0-23
Lahore	753	0-39	0-24

30. (1) We regret it is not possible to give from our returns the nett average price realised from all markets, for each principal class of paper manufactured.

(2)

—	1925.	1926.	1927.	1928.	1929.	1930.
	A. P.	A. P.	A. P.	A. P.	A. P.	A. P.
1. Printing Papers	3 6'77	3 7'23	3 7'72	3 5'85	3 6	3 6'88
2. Writing Papers	4 0'50	3 9'50	3 10'80	3 10'70	3 9'30	3 7'94
3. Papers of all sorts	3 4'63	3 4'88	3 3'86	3 2'90	3 2'95	3 1'84

We have done our best to indicate the average selling prices for Printings, and Writings, but regret from the records available, we can only furnish figures which can be accepted as approximately accurate.

We are sending five samples of each of the principal lines we manufacture, also a selection of imported papers.

31.

—	1926.	1927.	1928.	1929.	1930.
	Per lb.	Per lb.	Per lb.	Per lb.	Per lb.
	A. P.	A. P.	A. P.	A. P.	A. P.
Central Government and State Railways.	3 6'69	3 5'84	3 3'26	3 6'04	3 2'0
Madras Government	3 11	3 11'03	...	...	3 3'84
Bombay ..	...	...	...	3 11'76	3 11'68
Bihar and Orissa Government.	3 4'97	3 4'50	...	3 3'62	3 3'84
Burma Government	3 4'04	3 5'41	3 3'79	3 4'87	3 3'92
Mysore ..	3 6'94	3 3'01	3 4'74	3 8'19	3 5'88
Up-Country Markets	3 3'95	3 2'14	3 2'30	2 1'08	3 0'76
Calcutta Market	3 3'97	3 2'70	3 2'95	3 1'51	3 2'61
Madras ..	3 4'12	3 4'49	3 4'01	3 4'37	3 4
Bombay ..	3 3'89	3 1'04	3 0'06	2 10'03	3 3'76
Rangoon ..	3 3'43	3 3'17	3 3'78	3 3'49	3 3'27
East Indian Railway	3 5'14	In Central Government tonnage.	In Central Government tonnage.	In Central Government tonnage.	In Central Government tonnage.

These prices are nett, all freight, discounts, commission and other charges having been deducted.

It is impossible to maintain in all markets the same return to the mills as those markets close at hand, *viz.*, Assam, Calcutta, United Provinces, Bihar and Orissa. There are many influences at work which call for special considerations and have to be dealt with accordingly.

As supplies distributed further away from the mills come under the influence of Western or Southern ports, prices decline, so that full advantage of Calcutta prices *plus* Railway freights cannot be maintained. This is particularly so in such markets as Delhi and to the West, Lahore and Amritsar to the North, where freights from the sea ports of Bombay and Karachi are strictly competitive.

Bombay is one of the largest distributing paper markets in India, and at the same time the most difficult one to operate from the Indian Paper Mills point of view, on account of the extremely severe competition from the imported supplies, and trading can only be accomplished under the keenest conditions.

With the growth of the Indian papermaking industry, more attention each year has to be paid to the more distant markets on a strictly competitive basis.

It is common practice to take advantage of the economic area surrounding the site of manufacture, and the Paper Mills in India are no exception.

Actual prices in most cases to consumers in the economic area are no higher than elsewhere, but their return to the paper mills is greater owing to lower freight charges.

There are other causes which influence lower prices. In one or two up-country markets large printing works have been established, who are in a position to give contracts for large quantities of special good substance printing papers, which allow for long runs on the paper machines and from the paper manufacturer's point of view is most attractive business.

The mills retree lots of paper are very largely disposed of in up-country markets, their policy being to create the least possible disturbance in the nearer and more stable markets. At the same time retree lots enable us to meet the ever increasing competition as sales go further west.

It is these many varying circumstances in outlying markets that make it quite impossible to maintain level prices with Calcutta and surrounding districts.

32. Our prices must necessarily have a relation to the selling prices of imported papers of similar quality, but in view of the much larger range of the latter papers, it is impossible for us to meet all cases on a level price basis.

33. We have every reason to believe that, in many cases, the prices at which foreign producers sell to India are unremunerative, at least as regards the qualities which give us the strongest competition. Orders from India are, in the case of many of the Home and Continental Mills, looked upon as a "fill up" for the mills.

Continental Mills are so short of orders at the present time that if actual business is in sight they are always prepared to meet the customers by accepting prices below their original offers. It is difficult to secure concrete evidence of foreign mills accepting business at a loss as this is naturally a subject which they treat with considerable reserve. The general comments in Paper Trade Journals all indicate that business has slumped during recent months, and that prices generally are unremunerative.

Our Madras Agents recently reported to us about the visit to their city of the representative of a Dutch Mill selling Cream Laid Papers, when he stated the prices then being quoted were showing his company a loss of £1 per ton, and accordingly advised consumers to book their requirements immediately as this state of affairs could not be expected to continue.

34. We find foreign competition keenest in the port markets of :--
Bombay, Madras, Rangoon.

In the markets of Travancore and Kashmir, where paper is exempted from Central Government duty, business can only be secured at low prices.

35. We see no reason why papers manufactured with bamboo pulp in place of wood pulp should, in any way, be lower in price than the present standard qualities. We have introduced bamboo pulp (not of our own manufacture) into our papers and have on every occasion found the quality fully maintained by its use.

Although at this stage, this company cannot definitely make any claim to the production of bamboo pulp on a commercial scale, its considered opinion, in view of the small experiments made, is that a bamboo pulp can be secured to meet the many varied requirements in the way of a suitable raw material for paper manufacture.

36. There has been a general improvement in the papers produced by us. This has been due to the alterations made on our paper machines, and to the installation of more preparing machinery and up-to-date Straining Plant.

The market calls for a better white shade, also for a higher finished paper, and these demands have been met by the company.

Improvements in plant are continually taking place, with the object of eradicating foreign matter from our papers. The strength and bulk of our supplies have been fully maintained, and these important features continue to receive the appreciation of the trade.

Our bazar sales of Common Badami and Brown Packing papers are, however, very much on the decline, these two qualities being replaced by the inferior imported mechanical papers.

The principal consumers of the Indian Mills Badamis and Browns are Governments and Indian States, whose work calls for the better qualities of papers.

37. We propose that the percentage of Mechanical Wood Pulp should be increased from the very low figure of 65 per cent. to 75 per cent. of the total fibre contents.

There is little doubt that the paper industry in India has been adversely affected by the considerable quantities of printing papers coming into the country on the unprotected basis of duty, that were originally intended should pay the protected duty of one anna per lb. Witness the 7,817 tons of "not protected" printing paper at present coming into the country, which would go on to the protected basis of duty if the Mechanical Pulp contents of the paper were increased to the figure of 75 per cent., and which would conform strictly with contents in a News Printing. Papers containing only 65 per cent. Mechanical Pulp fibre contents when other materials are added to the furnish, conform more to the nature of a cheap printing paper than a News Printing, and the former, therefore, should be placed in the higher category of duty, viz., one anna per lb.

38. Our processes of manufacture remain unchanged.

We give below a short description of new plant and machinery, which represents additions and replacements since 1924:—

John Thompson Water Tube Boilers.—In November 1929, the two John Thompson Water Tube Boilers were put into commission.

General Specification.—Two John Thompson Water Tube Boilers with four drums, vertical type having a heating surface of 6,570 s. ft. constructed for a working pressure of 299 lbs. per sq. in. with patent superheaters to superheat the steam by 150° Fahr. The boilers are fitted with up-to-date Ash Handling Plant and Coal Elevators and two sets of Green's Patent Economisers.

The boilers are capable of raising 50,000 lbs. of steam per hour, and this amount is measured by means of two new Lea Recorder Meters.

Our present steam raising capacity is as follows:—

3 Babcock & Wilcox Boilers—22,500 lbs. per hour.

2 Thompson Boilers—50,000 lbs. per hour, and

3 Lancashire Boilers—18,000 lbs. per hour,

making a total of 90,500 lbs. per hour, whereas our present average consumption is approximately 67,000 lbs. per hour, thus leaving an ample steam supply for use in connection with the boiling of larger quantities of bamboo.

It is interesting to note that our coal consumption per ton of paper averages to-day 3.5 tons as against 5 to 6 tons of coal two years ago.

New Steel Piping.—Before the new boilers were put into commission it was necessary to replace our entire steam ranges, which were cast iron, and new Stop Valves, Dewrance Reducing Valves, and special high pressure steam traps at various points.

Pellitt and Wigzell's Main Engine.—This engine was originally designed for a working pressure of 120 lbs. per sq. in. and the installation of the Thompson Boilers with a working pressure of 200 lbs. per sq. in. necessitated the fitting of a smaller diameter High Pressure Cylinder complete with piston and piston rod, to the above engine.

Belliss & Morcom 1,100 K. W. Steam Turbine.—In November 1929, this was put into commission to provide power for both general use and for that required in our bamboo pulp scheme. It is a horizontal impulse type pass-out steam turbine producing 1,100 K. W. at 4,500 R. P. M. and is complete with single reducing gearing by Messrs. D. Brown & Sons producing a speed reduction of 750 from 4,500 R. P. M. and directly coupled to a 1,100 K. W. D. O., E. O. C. Generator. The pass-out pressure is 55 lbs. per sq. in. The turbine is complete with a surface condensing plant, steam jet air extractor and inter and after surface heater, twin-disc condensate and hot water pump and water circulating pump, and in connection with the generator was naturally installed large capacity circuit breakers, feeder circuit breaker switches, meters, etc., all mounted on black slate boards.

Steam Meters.—In order to keep an accurate check upon the efficiency of the plant, electroflow meters were installed to measure the quantity of steam used by the turbine, process plant, etc.

Cooling Tank.—In order to ensure ourselves of an ample supply of cold water for the condenser of the turbine it was necessary to construct on the maidan a large cooling water tank having a total capacity of 5½ million gallons. This tank is built in pucca brick work and is 300 ft. wide × 500 ft. long × 6 ft. deep. This large tank has also ensured for us a cleaner and more ample water supply for the mill process work.

Mill Electrification.—The gradual electrification of the paper mill has enabled the construction of three massive towers for the carrying of the overhead mains to the various departments of the mill.

The back shafts of all paper machines are now electrically driven and are controlled by Brook Hurst Starters.

The Back Water Pumps to each of the machines are also electrically driven.

No. 4 Beating Mill is now driven by electrical power.

All Paper Cutters, Reelers and the Stationery Departments are driven by independent motor units.

Green Process.—In January 1931, the completed green process was in full operation. This comprises two Bertrams Ltd. "White's Patent" Full-Drum Strainers, a long series of sand traps, three Auxiliary Watford "Tremor" Flat Down-Flow Strainers and one 3-drum concentrator. In designing this plant, particular care has been taken to make it suitable for dealing with boiled bamboo, and it has replaced a large Battery of Flat

Strainers, which although suitable for straining Sabal grass, in our opinion would not efficiently deal with bamboo.

Machine Strainers.—The use of flat strainers was abandoned and in their place were installed Bertrams Ltd. "White Patent" Full Drum Strainers at No. 3 Machine and one White's Strainer at each of the other machines.

Bleaching Towers.—We have installed five new bleaching towers for the bleaching of bamboo. In connection with these towers there are 3 circulating pumps directly coupled to 35 H. P. motors and 1 supply pump also directly coupled to a 35 H. P. motor. For the even distribution and mixing of bleached stock a specially designed lantern valve has been fitted to the supply pipe leading into each tower, and in this way the stock is also well aerated (a very important point with the efficient and economical bleaching of bamboo). These towers are so arranged that it is possible to work them in almost any variety of combinations. The towers have been housed in a reinforced concrete building, with a well lighted roof, and which will in the near future accommodate the new White Straining Plant.

Bamboo Crusher.—The bamboo crusher, made by Messrs. A. and W. Smith & Co., Ltd., of Glasgow, is now in the course of erection. This machine is built upon extremely massive and entirely new lines, and the makers have applied for a covering patent. It was designed and constructed only after we had made lengthy experiments with our original crusher. It is a six-roll crusher with the rolls arranged in pairs and is driven through massive gearing by a 100 H. P. motor.

Tube Wells.—As already indicated, we have experienced difficulty in the past to maintain, particularly during the monsoon periods, an adequate supply of perfectly clean water for the preparation of our half stuff. We have therefore installed three 5" tube wells and these pump directly to our overhead water tanks above the beaters, and are of immense value during the rains. These wells supply approximately 14,500 gallons of clean water per hour, and, incidentally, this water is now connected to the various drinking water taps in the mill and out cooly lines, with obvious advantage.

Back Water Tanks.—In an endeavour to conserve and maintain a clean water supply, we have also installed 4 Conical Back Water Tanks, one in connection with each machine, and this water is used for the emptying and filling of Potters and Beaters, and for the main supply of water with which to dilute the stock at the machines.

Mill Effluent Save-All Machines.—To further increase the economy of the mill we have put down two single-drum concentrator type Save-all Machines for dealing with the waste water from the paper-making machines, etc., which previously had passed straight into the river. From this source we now get a large quantity of very valuable fibre which is used for the manufacture of our domestic wrappers.

Rotary Roaster.—In January 1930, we installed a new large diameter Rotary Roaster built on the latest scientific principles for the production of a well-burnt soda ash, and is motor driven. This was put in to work in conjunction with the existing Rotary Roaster, and will enable us to deal with the additional spent lye resulting from the boiling of greater quantities of bamboo. In passing, the efficiency of the new Rotary Roaster is already reflected in our improved recovery figures.

New All-Steel Godown.—Early this year, we constructed a new steel godown 160' x 84' x 25', with two bays for the storing of 35,000 to 45,000 maunds of Bamboo. This Godown has been specially constructed so as to withstand the ravages made upon raw materials by insects, and it is for this reason that the godown has been raised upon concrete foundation blocks well above the level of the surrounding ground. When the lime and ash filling has been completely settled, we propose putting in a pucca floor of cement concrete.

Duplex Paper Cutter.—Early in 1929, we installed a new West End Engine Works Duplex Paper Cutter suitable for cutting paper from our No. 3 Machine.

61" Guillotine.—A Furnival "Express" Self-Clamp 61" Hydraulic Guillotine was installed during 1930. Being double the size of any of our own guillotines, this has greatly reduced our cutting charges and moreover it is accurate, speedy and economical.

Granite Press Roll.—In accordance with the latest practices we have installed Granite Press Rolls on our No. 3 and No. 4 Machines, and by so doing have greatly improved the character of the papers made on these machines.

New Indian Staff Quarters.—During the last two years we have built quarters for the accommodation of 12 single members of our Indian staff and one married quarter, together with quarters for the housing of two apprentices.

New Machinery Recently Shipped.—In addition to the foregoing, we have placed orders and, in some cases expect almost immediate delivery, of various additional new plants, of which the following are the principal items:—

New White Straining Plant.—To work in conjunction with the Bleaching Towers we have ordered and have received shipping advices for 3 Bertram White's Drum Strainers, and 2 Watford Improved Flat Down-Flow "Tremor" Strainers to work as auxiliaries with the Drum Strainers. These will be connected to the Bleaching Towers by a long series of Sand Traps and should effectively remove any undigested bamboo fibre or dirt which has escaped the Green Process treatment. This plant has been specially designed for the treatment of bamboo stock.

New Bleaching Tower.—We have also placed an order for an additional bleaching tower to work in conjunction with those already installed, and this will enable us to have considerable reserve bamboo bleaching power.

Extension of No. 3 Beating Mill.—Now that we have cleared the site occupied by the old Lancashire Boilers, we are able to proceed with the scheme for the extension to our No. 3 Beating Mill. This Mill, whilst adequate for the treatment of Sabai grass will not be large enough for beating bamboo, and it is for this reason that we are installing two 10-cwt. capacity West End Engine Works Umpherston Beaters. The building will be of reinforced concrete.

39. The total expenditure incurred on Buildings and Plant from 1924 up to date, is as follows:—

Buildings.		Plant.
Rs. 2,43,096-11-6.		Rs. 9,32,395-8-1.
divided as follows for—		
Paper.	Pulp.	Bamboo Pulp.
Rs. 7,01,281-10-7.	Rs. 58,500.	Rs. 4,15,710-9.

40. The paper manufacturing industry is one which, in order to maintain the maximum efficiency and production, demands the continual replacement of obsolete Machinery and the extension of the existing Plant.

We have in view, as soon as funds will permit, the undertaking of the following-improvements:—

- (a) The further remodelling of the Beater House, which in itself will entail a very heavy expenditure and is a scheme of some magnitude.
- (b) The entire re-designing, according to latest principles and practices, of our Rosin Size and Clay-Mixing plant.
- (c) The addition to our No. 3 Paper Machine of the following:—
 - (1) A 7 Bowl Stack of Calendar Rolls.
 - (2) The Suction Couch Rolls.
 - (3) The vapour absorption Plant to increase the drying power of this Machine.

(d) A Stack of 7 Bowl Super Calendars and Dampers.

(e) The installation of an Electrolitic Bleach and Caustic making Plant.

41. The nett Block value of the Company's property on December 1930. was as follows :—

	Rs.	A.	P.
Land	1,68,158	13	3
Buildings	3,63,000	0	0
Machinery	8,72,662	13	2
Railway Siding	337	2	10
Furniture	10	0	0
Motor Car	500	0	0
	14,04,668	13	3

42. Rs. 1,50,00,000 Buildings.

Rs. 5,50,00,000 Machinery.

This we consider a very conservative estimate for a four machine Mill, the same as we have at Raniganj.

43. The amount of Depreciation written off since 1923 is as follows :—

	Buildings.			Machinery		
	Rs.	A.	P.	Rs.	A.	P.
1923	2,500	0	0	12,602	15	3
	50,000	0	0*	6,350	0	0†
				1,50,000	0	0*
1924 . . . . .	...			1,465	2	0†
1925 . . . . .	...			250	0	0†
1926	50,000	0	0*	1,50,000	0	0*
	28,420	3	3	40,609	13	10
1927	35,127	12	0	1,22,856	15	9
1928	45,333	11	9	1,43,091	15	8
1929	31,017	10	9	1,42,826	5	8
1930	38,054	1	0	1,47,833	1	8

Reserves created all from profits.

	Rs.
1926—Improvements and Extensions	35,000
1927—Improvements and Extensions	1,00,000
Doubtful Debts	20,000
1928—Improvements and Extensions	80,000
Bamboo Plant	40,000
1929—Improvements and Extensions	30,000
Bamboo Plant	20,000
1930—Bamboo Plant	40,000
River Training	10,000

* From Reserves.

† Sale proceeds from old Machinery.

44.

Share Capital and Dividends.

	A.	B.	C.
	Rs.	Rs.	Per cent.
<i>1923.</i>			
Ordinary shares	8,88,225	...	...
Cum. Pref. shares	2,00,000	14,000 0	7
<i>1924.</i>			
Ordinary shares	8,88,475	...	...
Cum. Pref. shares	2,00,000	...	...
<i>1925.</i>			
Ordinary shares	8,88,475	...	...
Cum. Pref. shares	2,00,000	...	...
<i>1926.</i>			
Ordinary shares	8,92,225	67,453 2	7½
Cum. Pref. shares	2,00,000	42,000 0	7 for 8 years.
<i>1927.</i>			
Ordinary shares	8,92,225	1,12,421 14	12½
Cum. Pref. shares	2,00,000	14,000 0	7
<i>1928.</i>			
Ordinary shares	9,00,000	1,57,500 0	17½
Cum. Pref. shares	2,00,000	14,000 0	7
A. Cum. Pref. shares	4,00,000	21,000 0	5¼
<i>1929.</i>			
Ordinary shares	9,00,000	1,80,000 0	20
Cum. Pref. shares	2,00,000	14,000 0	7
A. Cum. Pref. shares	4,00,000	28,000 0	7
<i>1930.</i>			
Ordinary shares	9,00,000	1,80,000 0	20
Cum. Pref. shares	2,00,000	14,000 0	7
A. Cum. Pref. shares	4,00,000	28,000 0	7

45. We are sending you five bound copies of our half-yearly balance sheets from 1924 to 1930.

46. No debenture loan has been issued since 1923.

An issue of Rs. 4,00,000, 7 per cent. "A" cumulative preference shares was made in April, 1928.

47. The two forms asked for in connection with works costs are herewith included.

48. *Works cost per ton of pulp made from grass.*

	Rs.
Cost of grass per ton delivered and unloaded at Mill	52.730
Cost of boiling and bleaching per ton of dry grass—	
Caustic soda	7.625
Alkali . . . . .	.447
Lime	4.087
Recovered ash	5.367
Bleach	13.950
Cost of labour for grass picking, dusting and carrying	2.460
Cost of boiling house labour	1.310
Cost of labour at green process, potchers and presse pate	1.340
Cost of steam for boiling and bleaching	1.510
Establishment costs—	
Supervision	1.950
Office and sundry charges . . . . .	.850
	<hr/> 93.626
At a yield of 46 per cent. the total cost of preparing 1 ton of bleached grass pulp bone dry is	203.535
To this must be added cost of electrical and steam power for bleaching and straining plants	1.192
TOTAL	204.727

The cost of air dry pulp allowing 10 per cent. moisture is Rs. 184.255 per ton.

Approximate works cost per ton of pulp made from bamboo.

Cost of bamboos, delivered and unloaded at mill	32.00
Cost of boiling per ton—	
Caustic soda	12.25
Sodium sulphide	12.50
Recovered ash	3.24
Lime	2.05
Cost of bleaching	18.51
Cost of labour for handling and crushing . . . . .	.49
Boiling house labour	1.31
Green process, bleaching towers and presse pate	1.32
Cost of steam for boiling and bleaching	3.12
Establishment costs—	
Office and sundry charges . . . . .	.85
Supervision	1.95
Cost of power for crushing, etc. . . . .	.48
	<hr/> 90.07

At a yield of 44 per cent. the total cost of 1 ton of bleached bamboo pulp (bone dry) is 204.70

To this must be added for power for driving the green process, bleaching towers, and presse pate 1.010

TOTAL 205.71

The cost of air dry pulp allowing 10 per cent. for moisture is Rs. 185.14 per ton.

49. We do not anticipate any alteration in the prices of chemicals or of our working costs, but we have been able to secure grass this year at approximately 3 annas per maund less than in 1930. This will mean a reduction in the cost per ton of finished grass pulp, of approximately Rs. 11.

50. The following are the particulars called for, and have been taken for the year 1930 :—

	Rs.
Average value of stocks of coal	5,000
Average value of materials	4,86,560
Average value of machinery stores, etc. . . .	2,63,725
Average value of paper stocks	4,38,060
Average outstandings	5,84,225

51. The annual average Head Office expenses are Rs. 1,38,607.

The annual average Managing Agents' Commission is Rs. 83,961 which is calculated at 15 per cent. on the profits of the Company. This commission is 5 per cent. above the usual, which was agreed to by the Shareholders to be paid to the Managing Agents on account of their financial assistance to the Company in providing Capital when none was obtainable in the open market, and thus saving the Company from going into liquidation.

52. India is particularly well favoured and has all the necessary essentials for the establishment of a large and flourishing bamboo pulp and paper manufacturing industry. The country has inexhaustible supplies of the primary raw material, bamboo of proved quality for paper making purposes, and the Industry only has to continue to receive the encouragement of Government to establish what can become, in view of the enormous world consumption of pulp and paper, one of the most flourishing industries.

The introduction of bamboo as a paper-making material has opened up great possibilities. To meet this new development of what can now be accepted as our future primary raw material, the fundamental processes of the paper industry have had to be completely revised. This has led to the introduction of the special plant required to deal with bamboo, and the paper mills who are adopting this material, have incurred considerable expenditure in the remodelling of their mills, and in the carrying out of experiments to establish the most economical methods of production.

In our opinion, both the bamboo pulp and the paper-making industries are very closely identified with each other, the former producing the necessary pulp material for the latter to complete the process of manufacture and finally market the finished product.

It is necessary, in view of the present unsatisfactory conditions ruling in the Paper Trade of other countries, that full protection should be afforded to the Indian manufacturers, to enable them to bring their present schemes to a successful conclusion, failing which the above serious menace will have the effect of jeopardising a most promising and valuable industry.

53. We consider that protection should be continued,

- (1) In its present form.
- (2) At a minimum rate of 1 anna per lb.

Should imported prices further recede, additional assistance should be granted, corresponding to the fall in such prices.

- (3) (a) On all white and coloured printing papers which contain no mechanical wood pulp, or in which the mechanical wood pulp amounts to less than 75 per cent. of the fibre content.

- (b) Writing papers of all sorts.
- (c) As regards the many other classes of papers, in particular, kraft, imitation kraft, and manilla papers, at present coming into the country on an unprotected basis, and which will, undoubtedly at no distant date receive the attention of the Indian mills, we advocate arrangements should now be made that these papers should be inclined in the protective duty of one anna per lb. as soon as the Indian mills are in a position to show the executive side of Government that the manufacture can be satisfactorily undertaken by the mills.



FORM

Total expenditure incurred

Expenditure.	1925.		1926.		19
	Tons.	Amount.	Tons.	Amount.	Tons.
		Rs.		Rs.	
1. Grass	7,289	4,75,040 9 9	8,412	4,61,224 5 11	8,448
Jute	503	36,024 13 0	531	48,132 13 3	538
Hemp	222	17,156 14 0	106	8,297 8 0	...
Rags	117	8,664 4 0	19	2,275 6 3	64
Waste Paper	963	97,431 4 3	1,366	1,35,862 12 9	1,521
Bamboo . . . . .	...	.....	...	.....	...
2. Imported Pulp	2,713	6,41,498 7 3	3,900	9,37,850 5 7	4,280
3. Caustic Soda	503	1,39,028 15 4	481	1,19,110 0 0	525
Alkali	99	14,768 0 0	198	27,767 0 0	126
Bleaching Powder	520	1,09,721 13 9	580	1,13,110 14 10	663
Rosin	146	40,131 0 0	176	60,665 0 0	185
Sulphuric Acid	½	75 0 0	½	171 0 0	½
Alum Ferrie	400	38,715 0 0	442	38,790 2 4	453
Gelatine	½	167 0 0	...	.....	...
Lime	1,203	34,727 0 0	1,350	33,690 0 0	1,461
Hypo Soda	1	356 0 0	½	2 4 0	1½
English China Clay	1,043	85,004 8 0	723	59,911 0 0	1,131
Indian White and Yellow Clay.	666	34,893 1 6	989	47,137 3 9	510
Dyes	2½	11,434 15 10	2½	11,549 8 1	2½
4. Mill Labour . . . . .	...	4,22,651 15 3	...	4,73,021 12 0	...
5. Power and Fuel	44,742 (coal)	3,45,917 10 6	48,326 (coal)	2,96,110 4 6	49,530
6. Current Repairs and Maintenance. . . . .	...	2,36,403 4 10	...	2,49,337 11 6	...
7. Management, Supervision and Establishment. . . . .	...	35,676 10 9	...	41,674 10 0	...
8. Miscellaneous, Rent, Taxes and Insurance, Other Items. . . . .	...	44,483 13 2	...	50,442 0 7	...
9. Packing, Baling, Printing and Miscellaneous Charges. . . . .	...	80,435 9 9	...	1,11,394 1 7	...
TOTAL	61,138	29,49,537 10 11	67,602	33,27,917 12 11	69,433½
Total output of Paper	6,359	...	8,291	.....	8,730

I.

on the production of paper.

27.	1928.		1929.		1930.	
Amount.	Tons.	Amount.	Tons.	Amount.	Tons.	Amount.
Rs.		Rs.		Rs.		Rs.
4,48,803 8 7	7,050	3,81,103 15 0	7,227	3,67,168 11 6	6,889	3,63,254 11 1
43,916 4 9	655	50,333 8 0	98	6,180 13 0	26	1,991 4 6
....	...	.....	...	.....	223	21,931 2 3
10,002 9 3	17	4,228 1 3	7	1,389 7 6	3	1,024 6 9
1,53,203 12 0	1,934	2,00,559 12 3	1,354	1,38,607 2 6	1,413	1,53,694 9 6
.....	2	67 8 0	19	641 4 0	39	1,316 4 0
9,88,907 4 7	4,863	10,09,892 3 5	5,450	10,95,079 10 3	5,573	11,32,922 2 1
1,28,583 0 0	281	68 105 0 0	322	77,954 0 0	298	58,012 8 0
16,129 0 0	32	4,085 0 0	14	1,818 0 0	21	2,731 12 8
1,16,942 14 2	655	93,802 6 0	768	95,497 13 9	668	82,877 2 4
69,122 5 9	160	52,918 14 4	152	50,872 13 4	162	54,020 0 0
147 0 0	$\frac{1}{2}$	216 0 0	...	.....	$\frac{1}{2}$	210 0 0
37,876 0 0	492	42,063 0 0	456	38,739 0 0	437	38,111 0 0
.....	...	.....	...	.....	1	973 0 0
34,662 0 0	1,111	26,508 0 0	1,369	31,621 0 0	1,257	28,369 0 0
322 6 0	$\frac{1}{2}$	99 6 0	1	386 0 0	...	...
90,860 8 0	1,395	99,779 8 0	894	64,440 0 0	889	64,717 7 2
23,820 7 11	443	20,860 7 4	464	24,094 9 1	350	17,925 0 0
13,179 12 0	31	15,130 11 4	2 $\frac{1}{2}$	10,591 11 2	4	14,363 2 0
4,77,456 8 4	...	4,92,719 8 4	...	5,13,512 6 1	...	5,15,870 4 8
2,53,833 2 0	50,592	2,32,260 7 0	51,017	2,09,967 15 6	39,711	1,85,727 3 6
2,44,387 5 11	...	2,47,332 14 4	...	2,97,051 8 5	...	2,55,723 7 2
46,107 14 10	...	43,954 5 8	...	50,631 10 9	...	47,923 1 3
50,391 9 8	...	41,479 13 6	...	39,965 6 6	...	55,529 4 6
1,34,529 0 7	...	1,58,792 0 2	...	1,97,383 6 10	...	1,54,905 10 6
33,83,186 6 4	69,686 $\frac{1}{2}$	32,86,892 5 11	69,614 $\frac{1}{2}$	33,13,534 6 2	57,904 $\frac{1}{2}$	32,34,123 7 11
.....	9,173	...	9,092	...	9,218	...

FORM II.

Works cost per ton of finished paper.

Expenditure.	1925.		1926.		1927.		1928.		1929.		1930.	
	Cost per ton.		Cost per ton.		Cost per ton.		Cost per ton.		Cost per ton.		Cost per ton.	
	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.
1. Grass	1.146	74.704	1.014	55.628	.967	51.41	.769	41.546	795	40.884	.747	39.407
Jute . . . . .	.077	5.666	.064	5.806	.062	5.03	.071	5.555	.01	.68	.003	.216
Hemp . . . . .	.035	2.638	.013	1.001	..	..	..	..	..	..	.025	2.379
Rags . . . . .	.018	1.363	.002	.274	.007	1.146	.002	.462	..	.153	..	.111
Waste Paper . . . . .	.152	15.322	.165	16.368	.174	17.549	.212	21.864	.149	15.245	.153	16.663
Bamboo . . . . .	..	..	..	..	..	..	..	.007	.002	.07	.004	.143
2. Imported Pulp . . . . .	.426	100.881	.471	113.116	.49	113.276	.531	110.094	.6	120.444	.605	122.003
3. Caustic Soda . . . . .	.079	21.863	.058	14.366	.06	14.729	.03	7.424	.035	8.574	.029	6.233
Alkali . . . . .	.016	2.322	.024	3.349	.015	1.848	.003	.446	.002	.2	.002	.296
Bleaching Powder . . . . .	.082	17.254	.07	13.679	.076	13.395	.071	10.226	.085	10.504	.072	8.991
Rosin . . . . .	.023	6.311	.021	7.317	.021	7.918	.017	5.769	.017	5.595	.018	5.86
Sulphuric Acid . . . . .	..	.012	..	.02	..	.017	..	.024	..	..	..	.023
Alum Ferric . . . . .	.063	6.089	.053	4.679	.052	4.338	.034	14.586	.05	4.26	.048	4.134

(3) *Letter No. BPM/AM, dated the 4th July, 1931, from the Bengal Paper Mill Company, Limited, to the Secretary, Tariff Board.*

We are in receipt of yours of the 30th ultimo, No. 378, and attach herewith particulars called for regarding Writing Paper and Printing Paper manufactured by this Company during the past seven years and which are protected classes under the Act.

Quantity of Writing and Printing Papers manufactured during the past seven years, which are protected classes of paper.

	1924.	1925.	1926.	1927.	1928.	1929.	1930.
Writings . . .	588½	546½	869½	1,115½	1,133½	1,047½	1,318½
Piratings . . .	3,786	4,124½	5,210	4,929½	4,523½	5,561½	5,165
Total . . .	4,374½	4,671	6,079½	6,045	5,657	6,609½	6,483½

(4) *Letter No. 388, dated the 1st July, 1931, from the Tariff Board, to the Bengal Paper Mills Company, Limited.*

In continuation of my letter No. 378, dated the 29th June, 1931, I am to ask that you will be good enough to furnish the Board with certain further statements and information. For the sake of convenience in compilation and reply I have put the points in the form of a small supplementary questionnaire:—

- (1) Please prepare a statement showing the works cost per ton of grass pulp in 1924-25 in the same form as your reply to question 48 of the Board's questionnaire.
- (2) Please explain fully with reference to each item the reasons for the variations, if any, between the costs of 1924-25 and those of 1930-31.
- (3) Please prepare an estimate on the same lines as Form II (see question 47 of the Board's questionnaire) showing approximately what would be the works cost per ton of finished paper if the following conditions were assumed:—
 - (i) That the total output of paper is the same as for 1930-31, and
 - (ii) that the primary materials represented in the total output of paper are in the following proportion:—
 - (a) Rags, hemp, paper cuttings, etc., in the same proportion as in 1930-31,
 - (b) imported pulp not more than 15—20 per cent., and
 - (c) the balance consisting entirely of grass.
- (4) Please state in detail—
 - (a) what reductions in the manufacturing cost of grass pulp may be expected if the output of grass pulp is increased to the extent indicated in question 3 above.
 - (b) to what extent, if any, the cost of grass is likely to increase if it is necessary to obtain an additional supply of grass corresponding to the increased output of grass pulp.
- (5) Please state—
 - (a) whether the additional supply of grass could be obtained from the existing areas,
 - (b) if not, what other areas are open to you and the available supplies of grass in these areas,
 - (c) the average distance and cost of transport from these areas.

- (6) In what respects would (a) the quality, and (b) the marketability of the papers made on the conditions assumed in question 3 above differ from those of the papers produced by you in 1930-31.

The Board would be glad to receive the reply to this letter not later than 22nd July. It should be addressed to 1, Council House Street, Calcutta.

(5) *Letter dated the 20th July, 1931, from the Bengal Paper Mill Company, Limited.*

We are in receipt of your letter of the 1st instant, No. 388-P. 7, and have much pleasure in submitting herewith our reply to the supplementary questionnaire sent us.

Enclosure.

Works cost per ton of Pulp made from Grass, 1924.

	Rs.
1. Cost of Grass per ton delivered and unloaded at Mill	63-890
Cost of Boiling and Bleaching per ton of dry Grass—	
Caustic Soda	17-466
Alkali	5-335
Lime	4-172
Recovered Ash	10-633
Bleach	27-395
Cost of Labour for Grass Picking, Dusting and Carrying	2-650
Cost of Boiling House Labour	1-631
Cost of Labour at Green Process, Potchers and Press Pate	0-907
Cost of Steam for Boiling and Bleaching	4-134
Establishment costs—	
Supervision	1-225
Office and Sundry Charges	0-840
	<hr/>
	140-278
At a yield of 40 per cent. the total cost of preparing 1 ton of Bleached Grass Pulp Bone-dry is	350-695
To this must be added cost of Electrical and Steam Power for Bleaching and Straining Plants	3-259
	<hr/>
TOTAL	353-954
	<hr/>
The cost of air-dry Pulp allowing for 10 per cent. moisture is	318-559
	<hr/>

2. *Grass.*—In 1924 the average cost of grass was approximately 20 per cent. above the price ruling in 1930 due to the higher extraction charges.

Chemicals.—The cost of chemicals used for boiling and bleaching was in 1924 considerably above the cost ruling in 1930, the average prices being as follows:—

	1924.	1930.
	Per ton.	Per ton.
	Rs. A.	Rs. A.
Caustic Soda	330 0	243 12
Alkali	195 0	126 4
Lime	34 11	22 9
Bleaching Powder	245 0	123 12
Coal	8 12	4 0

In 1924 the percentage of soda recovered was 48·93 per cent. as against 78·20 in 1930.

Since 1924 big economies have been made under this head by the increase in the efficiency of our soda recovery plant and this in itself has enabled us to reduce the quantity of caustic soda used per ton of Grass.

Labour.—Labour charges are approximately the same for the 2 years under review and therefore call for no special comment. In the case of supervision the lower figure shown in 1924 is due to the general lower efficiency of the Mill when no tonnage or bonus was earned by the staff.

Steam.—The 1924 items into which steam calculations have been taken into account show a large increase over similar cost items for 1930 owing partly to the higher price of coal per ton and a much lower efficiency of our steam raising and power generating plant.

Grass yield.—The yield of grass pulp in 1924 was 40 per cent. whereas in 1930 it had risen to 46 per cent., and this satisfactory increase in our grass yield is largely attributable to the introduction and installation of straining and fibre recovery plant during the past 2 years.

FORM II.

	Tons.	Rs.
3. (1) Grass	1·745	92·055
Jute	·003	·216
Hemp	·025	2·379
Rags . . . . .	...	·111
Waste Paper	·153	16·663
Bamboo	·004	·143
(2) Imported Pulp	·121	25·580
(3) Caustic Soda	·060	13·020
Alkali	·004	·600
Bleaching Powder	·101	12·473
Rosin	·018	5·860
Sulphuric Acid . . . . .	...	·023
Alumina Ferric	·048	4·134
Gelatine . . . . .	...	·105
Lime	·313	7·142
Hypo Soda . . . . .	...	...
English China Clay	·097	7·020
Indian Clay	·038	1·944
Dyes . . . . .	...	1·558
(4) Mill Labour . . . . .	...	61·388
(5) Power and Fuel . . . . .	...	19·486
(6) Current Repairs and Maintenance . . . . .	...	29·241
(7) Supervision and Establishment . . . . .	...	5·198
(8) Rent, Taxes and Insurance . . . . .	...	6·024
(9) Packing, Baling, Printing and Miscellaneous charges . . . . .	...	16·800
		<hr/> 329·163

4. (a) In preparing Form II in reply to question 3, we have done our best to place before the Board an approximate estimate of our Works costs per ton of Finished Paper for the year 1930, assuming that the consumption of Wood Pulp was only 20 per cent. and the balance, representing 80 per cent. of the Wood Pulp actually used, being made up entirely of Grass. In our statement we have adhered to our average working costs for the year 1930 increasing only such items as would be affected by the larger consumption of grass. From our practical experience we feel, however, that the final cost should be accepted only with considerable reserve. The introduction of so much grass in our productions would, as the Mills are to-day positioned, be an impossibility and it is upon this account that we find it difficult to prepare an acceptable statement which could be adhered to in general Mill practice.

The use of such a large quantity of Grass would necessitate considerable increase of Capital Expenditure for the extra Plant that would be required, in the shape of Grass boilers, Dusting Machines, Picking Sheds, Storage accommodations, Elevators and dust collecting plant.

Owing to the nature of Sabai Grass, larger time would have to be devoted to beating, and if the present output was to be maintained it would be necessary to increase the number of beaters and arrange for additional drying power at the Paper Machines. Whilst these would not present insurmountable difficulties they would entail heavy expenditure, and moreover, we have been devoting our energies to the introduction of large quantities of Bamboo into our papers, the difficulties of which are of an entirely different nature.

(b) We do not anticipate any increase in the cost of the additional quantities of grass that would be required.

5. (a) Our total requirements of grass to comply with the assumed conditions in question 3 are approximately $4\frac{1}{2}$ lacs of maunds. Our existing arrangements for grass supplies can be supplemented to meet the extra quantity called for.

We give below particulars of the districts and the quantities each can economically produce at present rates:—

	Mds.
Chota Nagpur District	125,000
Ramnagar	125,000
Cuttack and Mourbhanj	50,000
Sahebgunge	25,000
Talcher and Bamra Jungles	30,000
Dhudhi Jungles	40,000
Palamau Jungles	20,000
Daltongunj	25,000
Dehri-on-Sone	25,000
Sundry small Jungles	25,000
	<hr/>
	490,000

6. (a) In view of our importations of Strong Pulp being allocated entirely to the manufacture of Badami and Brown Papers, and as this represents approximately 20 per cent. of our total imports of Wood Pulp, the furnish of our Printing and Writing Papers would be almost 100 per cent. Grass fibre content. The introduction of so much grass into all our papers would not permit us to produce the variety of qualities which we manufacture to-day.

We make at present what is known to the trade as a Special Indian Account Book watermarked paper, which contains 80 per cent. of grass, and as the name implies is required for account book purposes in which strength, bulk, good finish and hard handling characteristics are essential but it is quite unsuitable for general printing.

(b) The Indian Account Book paper having such a high percentage of Grass Pulp commands a ready sale at standard rates. It is our opinion that the general introduction of 100 per cent. Grass papers would not receive the approbation of the trade.

The suggested arrangement would limit the Mills to the manufacture of one quality Bleached Papers only and dealers would therefore have to secure their many other varied qualities elsewhere.

The papers made on the assumed conditions of question 3 would differ from those manufactured by us in 1930 in so far as the hardness and general appearance is concerned.

Printing papers—which in the past have represented a large percentage of our manufactures—must be kindly to the feel in order to take type impression readily, with reasonably quick drying properties, resulting in a clear, neat and in every way a thoroughly satisfactory job from a Printer's point of view.

(6) *Letter dated the 12th August, 1931, from the Bengal Paper Mills Company, Limited, Calcutta.*

As requested by the Board during our oral evidence, we now have pleasure in sending herewith the further particulars asked for.

Enclosure.

Replies.

(a) 2.116 tons of coal per ton of Unbleached Grass Pulp.

If this coal consumption on Unbleached Grass Pulp is averaged over our entire consumption of unbleached pulps—including wood pulps—then the average coal consumption figure would be .778 tons. Our total coal consumption under this head was in 1930, 7,895 tons.

(b) 3.136 tons of coal per ton unbleached pulp is required for converting one ton of Unbleached Pulp into paper.

We have used 10.144 tons of Unbleached pulps together with loading and sizing materials for the production of 9,218 tons of paper.

Our total coal consumption under the second head was in 1930, 31,816 tons.

	1924.	1930.
	Rs.	Rs.
Bleach	25-775	8-991
Sizing account—		
Rosin, Acid, Alum, Gelatine . . .	14-919	10-099
Loading account—		
China clay, Indian clay	17-000	8-964
Dyes	3-500	1-558
Mill Labour	71-593	45-053
Power and Fuel	54-565	13-484
Repairs and Maintenance	45-710	26-891
Management, Establishment	4-444	4-096
Rent and Insurance	7-651	6-024
Packing, Baling, Miscellaneous charges	12-556	16-800
Total conversion charges per ton paper	257-713	141-983
Total conversion charges per ton unbleached pulp	230-15	129-021

EXPLANATIONS.

Bleaching.—The difference between the Bleaching charges for 1924 and 1930 is accounted for by the higher cost of Bleaching Powder, the larger proportion of grass used and the lower efficiency of the plant in 1924.

Sizing.—Although the cost of Rosin in 1930 was approximately 50 per cent. more than in 1924 we have been able to effect considerable economies.

Loading.—The higher cost of loading is attributable to the higher prices of clays ruling in 1924 and the absence of suitable mechanical arrangements for ensuring the elimination of losses.

Labour.—The increased labour charges in 1924 is due to the lower output from the Mills. Individual wages show little or no fluctuations.

Power and Fuel.—The average prices of coal in 1924 was Rs. 8-12 per ton, for approximately 25 per cent. first class coal and 75 per cent. second grade coal. In 1930, the average price was Rs. 4 for approximately 10 per cent. of first class coal and 90 per cent. second class coal. The above, therefore, accounts for a part of the increased cost under this item. Other contributory causes being the extravagance of our steam raising and power plant and the lower output in 1924.

Packing, Baling, etc.—The lower packing, baling, printing and miscellaneous charges in 1924 is due to the smaller quantity of baling undertaken.

The average cost of Grass at Mill for 1931 is Re. 1-12-2 per maund as against Rs. 1-15 per maund for 1930. The difference being As. 2-10 per maund.

The average cost of Railway freight in 1930 on paper was Rs. 14-39 per ton. The increases now notified by the E. I. Railway Company and if applied to other railways will bring the average cost of freights to Rs. 16-67 per ton of paper.

NOTE.—In compliance with the request of the Board we confirm that it is our opinion that more power is required for beating Bamboo than is so in the case of wood pulp. We estimate that the added cost per ton of Bamboo paper due to this cause would be approximately As. 8. Again more steam and power is required for preparing paper pulp from Bleached Grass Pulp than is required for either Wood Pulp or Bamboo.

For the information of the Board, the consumption of coal per ton of paper at our Mills, January—June 1931 was 3-67 tons, the average cost for coal being Rs. 3-12 per ton.

(7) *Letter dated the 5th September, 1931, from the Bengal Paper Mill Company, Limited.*

In looking through the evidence put up by our Company, the writer finds that, although at the original enquiry, the information was given, nothing seems to have been said about the 20 per cent. dividend we have been paying on Ordinary shares.

Seeing that you are acquainted with the matter, we need not detail the circumstances of the compulsory reduction in the value of Ordinary shares by 75 per cent., or the subsequent issue of a certain number of bonus share. All we should like to draw attention to is that, after lying for some years out of a dividend, the 20 per cent. referred to as being paid now-a-days, is only equal to something like 6 per cent. on the original value of the Ordinary shares.

THE BENGAL PAPER MILL COMPANY, LIMITED.

B.—ORAL.

Evidence of Messrs. A. L. McLATCHIE, J. C. LOWE and T. H. TODD recorded at Calcutta on Tuesday, the 4th August, 1931.

President.—Mr. McLatchie, you represent the Bengal Paper Mill Company.

Mr. McLatchie.—Yes.

President.—What is your position in the Company?

Mr. McLatchie.—A Director.

President.—Mr. Lowe, you are the Mill Manager?

Mr. Lowe.—Yes.

President.—And Mr. Todd?

Mr. Todd.—Assistant Salesman.

President.—I find it very difficult to understand from the figures that you have given here the exact capacity of your mills as equipped at present. You give the total capacity of the mills in terms of paper as 850 tons monthly. That approximately works out at 10,000 tons a year. I find from your original evidence in 1925 that your output in terms of paper was 8,400 tons. I can't see any additional equipment which has been installed since then, so how exactly do you account for the increase in the figure of capacity that you give of paper?

Mr. McLatchie.—The position is that the mill to-day is running smarter than in 1924; in other words the machines turn out a larger tonnage than in 1924 which was approximately 6,500 tons.

President.—Is it right to say that to a very large extent the increase in the effective capacity is due to improvement in the power plant?

Mr. McLatchie.—Partly. We have also installed two new beaters which helps the beating capacity; the machines themselves have been speeded up considerably and to-day approximately produce almost 50 per cent. more paper.

President.—So that if no further plant is installed may I take it that the paper capacity may be taken as 10,000 tons a year?

Mr. McLatchie.—Yes.

President.—What is the pulp capacity? You say here that owing to the introduction of bamboo pulp you are unable to make any precise statement.

Mr. McLatchie.—We did not wish to do that until we knew more or less what our bamboo pulp plant was likely to do. We can now give you figures which can be accepted as reasonably accurate. A comfortable grass pulp capacity at Ranigunge, as it is to-day, is 2,20,000 maunds of grass per annum. That on a 40 per cent. yield into paper is 3,500 tons. I have kept it as paper because it is very much more convenient for you to make a comparison. Our bamboo plant capacity, providing it reaches the maximum guarantee given by the makers, is 10 tons of crushed bamboo per 8 hours which limits the whole production. Now, under the guarantee of the makers, we cannot expect to run it continuously for 24 hours, which would mean 30 tons per day. But we may reasonably expect it to run 10 hours each shift in which case the capacity of the crusher is approximately 25 tons of crushed bamboo per day of 24 hours, on two shifts. On that basis we think we should crush approximately 7,200 tons of bamboo per annum, that is 600 tons of bamboo per month. If you take a conservative figure of 40 per cent. yield and as we have stated, that yield on bamboo must be accepted with considerable reserve, because we have not gone far enough to test it, but in view of what other mills are doing who have a better yield our figure is a conservative one, this would give us 3,000 tons of paper. That now is the absolute maximum capacity

of Ranigunge as regards bamboo and grass. We are taking a conservative grass pulp estimate, but it is a safe one and it is one that will enable us to maintain a high standard of efficiency.

President.—The grass capacity and bamboo capacity taken together is 6,500 tons of paper?

Mr. McLatchie.—That is right.

President.—What do you consider the spread between unbleached pulp and paper?

Mr. Lowe.—It depends of course very largely on the fibre. We cannot give the actual figures for bamboo, but, assuming that it is the same as in the case of grass, a figure of about 7 per cent. would be a fair estimate for loss from the unbleached to the bleached stage.

President.—Would you consider that the normal wastage? It sounds rather high.

Mr. Lowe.—You have got considerable mechanical loss too.

President.—But just now I am on the question of chemical loss.

Mr. Lowe.—The actual chemical loss would probably range between 4 and 5 per cent.

President.—And then in addition to that in the bleaching stage itself, you have some mechanical loss which would bring it up to 7 per cent.?

Mr. Lowe.—Yes.

President.—Then after the bleaching stage on the paper machine?

Mr. Lowe.—4 per cent. that is the figure we give from our actual experience.

President.—4 per cent. calculated on the bleached pulp or 4 per cent. calculated on the unbleached pulp?

Mr. Lowe.—On the final product.

President.—What do you call the final product?

Mr. Lowe.—The paper.

President.—I should like to have the figure as exactly as you can give it. If you take the chemical loss, the mechanical loss and the moisture loss, taking air dry pulp and tracing the loss through to the end of the process, what is the total wastage? Make it as approximate a figure as you can possibly get.

Mr. Lowe.—On grass pulp I should say 11 per cent.

President.—11 per cent. of the air dry unbleached pulp would be lost before the finished paper results?

Mr. Lowe.—Yes.

President.—That is on grass?

Mr. Lowe.—Yes.

President.—On bamboo?

Mr. Lowe.—It might be slightly less, say 10 per cent., but, as I said, this figure that we give is not from any detailed experience that we have.

President.—Mr. McLatchie, you gave me this figure of 7,200 tons of bamboo a year on the assumption that you worked two shifts of 10 hours a day?

Mr. McLatchie.—Yes.

President.—That assumption again is based on the further assumption that the makers' guarantee is fulfilled?

Mr. McLatchie.—Yes. I might say the makers' guarantee was fulfilled in the test at home. But as you will realise it was probably run for a short period. But if we are able to feed the crusher, and maintain it the capacity would be 10 tons of crushed bamboo per 8 hours.

President.—How long have you crushed now in your plant?

Mr. Lowe.—We have worked it continuously for three days—average day shift only.

Mr. Lowe.—We have worked 10 hours in order to bring up the figures to the maximum capacity of the crusher.

President.—I suppose that is really much too short a period on which to base any calculation?

Mr. McLatchie.—Quite right.

President.—So that at the present stage we have nothing to go upon except the makers' guarantee?

Mr. McLatchie.—Yes, for the capacity of the crusher. We believe from our experience that the makers' guarantee will be secured at Ranigunge.

President.—From your experience, so far, it looks as if the makers' guarantee might be substantiated?

Mr. McLatchie.—That is so.

President.—Taking the capacity of the pulp plant at the figures that you gave, what would be the margin between the capacity of your paper machine and the capacity of your pulp plant?

Mr. McLatchie.—We have 3,500 tons of paper to make from other material to reach our 10,000 tons output.

President.—That is to say your total capacity is 10,000 tons?

Mr. McLatchie.—Yes.

President.—In order to get the exact pulp equivalent of that, in the first place, you have to deduct the loading. 10,000 tons of finished paper I take it means paper with the loading?

Mr. McLatchie.—Yes. We say we have a capacity to make 6,500 tons of paper from bamboo and grass as the plant is now operating. Then we state that our wood pulp requirement—the minimum requirement—for the future, is 150 tons per month, that is 1,800 tons a year. Convert that into paper at the pulp yield and that gives us 1,530 tons of paper—that is taking pulp at standard yield. That leaves us to make 1,970 tons of paper for which we have to find material.

President.—6,500 tons is the paper that you get out of your grass and bamboo assuming the maximum capacity?

Mr. McLatchie.—Yes.

President.—To that you have added 1,530 tons of paper, which is the paper equivalent of your minimum imported pulp requirement—which is 1800 tons. That gives you 8,030 tons.

Mr. McLatchie.—Yes.

President.—At this stage I should like to go on to the paper capacity which you give as 10,000 tons. If you deduct the loading in it and take the fibre content, that would mean 9,000 tons as the fibre content?

Mr. McLatchie.—Yes.

President.—The total pulp that we have reached so far, including your imported wood pulp in terms of paper, is 8,030 tons, therefore there is a margin to be accounted for of 970 tons. This does not take into account other indigenous materials that you use.

Mr. McLatchie.—That is so. If we are going to say that our papers have a steady 10 per cent. of loading, that would mean on 10,000 tons of paper approximately 1,000 tons of China clay, but actually we would use 2,000 tons of China clay.

President.—At this stage I should like you to rule out China clay altogether.

Mr. McLatchie.—In that case we would have to find 970 tons of fibrous material for paper which we say can be secured through waste paper, which plays rather an important part in our manufacture in view of a machine and a half running on Badami and Brown papers, the furnish for which consists of a fair proportion of waste paper, hemp and jute.

President.—Which would be an easy thing to do.

Mr. McLatchie.—Yes.

President.—I take it that this 1,800 tons of imported pulp which you would require is for special classes of paper.

Mr. McLatchie.—We require it because the pulp capacity of our mills, as far as I can see, is limited to the figure we have given you, and it is a material that is extremely useful. We don't see that we can do without imported pulp unless something was secured in the country in the shape of bought bamboo pulp to take its place. We see no prospects at the moment of being able to do without this minimum quantity of 150 tons monthly of imported wood pulp.

President.—Assuming for argument's sake that you would be able to get whatever quantities of bamboo pulp you require, in that case what would you specify as your minimum requirements of imported wood pulp?

Mr. McLatchie.—I follow your point. The use of imported pulp to us would be necessary. In case of breakdowns in our preparing plant, either bamboo or grass, and so as not to interfere with the production on the machines, we should immediately fly to our store of wood pulp. We would have no reserve of either from grass or bamboo pulp in our own mill, so that in the case of any necessity, either, we would have recourse to imported pulp, or bought bamboo pulp from some Indian company, provided of course it was marketted in the way that we can store it comfortably. That is a very essential point. Bamboo pulp produced in the country if it was given to us, say in wet condition, 50 per cent. moisture would not suit us at all. The essential thing is that the pulp must be produced in air dry condition.

President.—In the way in which it could be stored.

Mr. McLatchie.—In the same form in which we receive wood pulp from home; otherwise it would quickly deteriorate if it contained a large percentage of water. There is another thing which one has to guard against and that is in the case of fire. Suppose our raw material either bamboo or grass should unfortunately catch fire, and unless we had a very excessive stock, we would have to go back to either imported pulp or bought bamboo pulp to maintain our production.

President.—I see your position. The real question with regard to this minimum requirement of imported pulp as you specify, is that it is, so to speak, a standby to your pulp plant.

Mr. McLatchie.—It is an insurance against any trouble either mechanical or labour trouble, that might happen in our own pulp preparing plant at Raniganj. By having this reserve we would not in any way have to curtail our output. As you know the success of any undertaking is to maintain output.

President.—There is rather a snag in that argument, taking your figures. 6,500 tons, that represents the quantity of pulp you can make.

Mr. McLatchie.—Yes.

President.—The question of providing a standby, that would arise even if you could make an amount of pulp equivalent to the whole of your paper capacity. Supposing your pulp capacity was, let us say, 10,000 tons of paper, even then as a matter of ordinary prudence it is necessary to provide for a supply either of imported pulp or pulp bought from some other Indian mill as a kind of reserve.

Mr. McLatchie.—It would always be necessary.

President.—What I am getting at is this: 1,500 tons of paper is the equivalent of your minimum quantity of imported pulp. That is simply the margin between your pulp capacity and your paper capacity.

Mr. McLatchie.—That is the margin.

President.—Your pulp capacity is 6,500 tons of paper from grass and bamboo. To that we add about 1,000 tons of various fibrous material. You get 7,500 tons and 9,000 tons is the fibre equivalent of your tonnage of finished paper. There is a margin of 1,500 tons. Even if you did make that 1,500 tons of pulp in your mill, even then you would require a standby.

Mr. McLatchie.—Yes.

President.—Therefore your minimum requirements under present conditions will be more than 1,500 tons, because 1,500 tons simply covers the margin.

Mr. McLatchie.—That is quite true. We might say for argument that we keep a reserve of 500 tons in the mill for such a contingency as I have mentioned. I am trying to make out a case that we shall always require a minimum of 150 tons monthly of wood pulp.

President.—That you consider is the minimum requirement as a standby.

Mr. McLatchie.—That is what, at the moment, we consider necessary to complete our fibrous requirements for 10,000 tons of paper. In addition to that we should have to have a reserve for contingencies which I have mentioned.

President.—From your experience a reasonable minimum requirement on that account would be how much.

Mr. McLatchie.—I should say about 500 tons.

President.—We have got your estimated requirement on account of the present deficiency in the pulp capacity. We have got your minimum requirement on account of the necessary reserves if there is a breakdown and so on. There is one other point. Are there certain classes of paper which you have been in the habit of placing on the market here for years and which you don't want to give up for obvious reasons? Are there classes of paper for which it is indispensable that you should use imported pulp? Is there, that is to say, a third head under which you require?

Mr. McLatchie.—There might be a third head under requirements, for bank papers and possibly high grade white papers. We cannot state that bamboo will meet all the requirements.

President.—Which are now made of wood pulp.

Mr. McLatchie.—Yes. We have not gone far enough to make such a statement as that, but we do believe from what we have seen that it will take the place of the very great majority of the imported wood pulp. Whether it will take the entire wood pulp requirements, I am afraid is a matter which we can't say definitely.

President.—So that what your minimum requirements of imported pulp would be under that head, would depend on how far the anticipations with regard to bamboo materialise?

Mr. McLatchie.—Yes. I think we might say that bamboo will replace a great deal of the imported wood pulp and the limited requirements that you are referring to for special papers, as far as Bengal is concerned, I should say 200 tons a year would cover any special pulp requirements for special classes of paper for which the bamboo pulp will not be a suitable fibre.

President.—That really is a negligible factor.

Mr. McLatchie.—It can be treated not as of great importance, but it is a position that might come about. In view of our not having the experience of bamboo pulp that others have, we do not like to say definitely that bamboo will fulfil all our pulp requirements.

President.—Now I go on to question 4 regarding the various classes of paper that you make. I find from these analyses of output that you give here, that your percentage of wrappers is higher than I have seen in the case of many other mills.

Mr. McLatchie.—Yes.

President.—Your brown wrappings account for 18.13 per cent. of the total output. By the way do those figures relate to your 1930 output?

Mr. McLatchie.—They are the average figures for 1928, 1929 and 1930.

President.—Taking your average of the last 3 years brown wrappings amount to 18.13 per cent. I take it that figure includes both the brown wrappers that you place on the market and the wrappers that you make for your own use?

Mr. McLatchie.—That is correct.

President.—In 1930 the browns that you have made for the market, amounted to 1,100 tons.

Mr. McLatchie.—Yes.

President.—And the wrappers that you make for your own use was a little over 400 tons.

Mr. McLatchie.—1930—442 tons, 1929—485 tons and 1928—433 tons.

President.—The total quantity of browns and mill wrappers that you made in 1930 is 1,542.

Mr. McLatchie.—Yes.

President.—In addition to that you make also a fairly considerable proportion of semi-bleached and unbleached papers.

Mr. McLatchie.—Might I say something in connection with unbleached paper? It is a name given to the paper which to-day is not correct. During the war we had to make for Government a paper with the minimum amount of bleach which was called unbleached. Now the name has stuck to the paper, although in the last tender it has been altered to semi-bleached. From our point of view it is almost the same as fully bleached paper, except that it is coloured to get the yellow colour.

President.—Which is to undo the bleaching?

Mr. McLatchie.—We bleach it and then colour it.

President.—The semi-bleached accounts for 6·7 per cent. of your output. If you take the bleach in the fully bleached paper as 100, then what is the percentage of bleach in your semi-bleached?

Mr. McLatchie.—We have used the name given to it by Government. Actually in manufacture, it is about 90 per cent.

President.—So that your semi-bleached goes out of that category altogether.

Mr. McLatchie.—Yes.

President.—Your superior badami contains the same amount of bleach as a fully bleached paper.

Mr. McLatchie.—Practically to all intents and purposes it is the same.

President.—Is this the paper (Showed a slip block made of semi-bleached paper)?

Mr. McLatchie.—That is the paper we are talking about.

President.—What is it called?

Mr. McLatchie.—Semi-bleached. We bleach the paper and put some amount of colouring matter to get that colour. If we had left it alone, it would have the shade of white printing paper.

President.—It would have made no difference at all to your cost if Government required this paper as completely white?

Mr. McLatchie.—It might be slightly less expensive, but there is really nothing in it.

President.—Why do Government want things to be shady?

Mr. McLatchie.—Originally Government started off with half bleached. At that time it was only half bleached—I am now going back 30 years. This was carried on until Government gradually wanted their qualities improved. So, naturally each mill put a little more bleach in. They maintained the shade. That went on, until such time as it became a fully bleached paper. During the war, we went back and started on unbleached paper again.

President.—Really unbleached paper?

Mr. McLatchie.—Not really unbleached paper. Government during the war only allowed a certain fixed quantity of bleach for the use of paper mills—they cut down our supplies.

President.—Take your common badami? Would you call that unbleached?

Mr. McLatchie.—You mean unbleached entirely?

President.—Yes.

Mr. McLatchie.—We have only three papers which are entirely unbleached, namely common badami, wrappers and browns.

President.—Do you sell any of your common badami to Government?

Mr. McLatchie.—Government are the largest consumers from our point of view; 60 per cent. goes to them.

President.—Your really unbleached papers account for about 30 per cent. of your output?

Mr. McLatchie.—That is quite correct. We have a machine and a half more or less steadily running, out of our four machines at Raneegunge, on unbleached paper.

President.—I find from your figures of yield that they are better than what I have seen in other cases. May I take it that one reason why your yield figures are better is that you make so high a proportion of unbleached paper that for one thing you are able, to that extent, to save the losses that result from bleaching. Bleaching does account for a certain amount of loss of fibre?

Mr. McLatchie.—That is correct.

President.—So that to the extent that 30 per cent. of your output is unbleached, to that extent you avoid that wastage?

Mr. McLatchie.—Yes, the bleaching loss is avoided.

President.—And then when you make papers like brown wrappings and common badami you are in a better position to use the wasted fibre.

Mr. McLatchie.—In badamis, to a small extent.

President.—In wrappers?

Mr. McLatchie.—In badamis, almost pure fibre bought for the purpose of badami papers is used. In brown papers we do put in a certain amount of recovered fibre that you saw at Raneegunge provided the material is clean enough to go into the brown paper which is sold in the market. Then if the material is not good enough we put it into mill wrappers.

President.—If it is not good enough for the saleable brown paper?

Mr. McLatchie.—Then, it goes into wrappers. The material that you saw coming away from the fibre recovery plant during your visit was good enough to go into badami papers. In fact, it was going at the time into badami papers, but it is not always as clean. When the mill is cleaned up at the week end, you will find it dirty and of a darker shade. Then, it will have to go into browns.

President.—Is the pulp that you are speaking of bleached pulp?

Mr. McLatchie.—Yes.

President.—Is it air dry or bone dry?

Mr. Lowe.—It is bone dry.

President.—So that from the quantities of grass that you give here for a ton of bone dry pulp I get a percentage yield of 46.

Mr. Lowe.—That is correct.

Mr. McLatchie.—46 and 42 for the two yields.

President.—Against this 46 per cent. of bleached bone dry pulp, can you tell me the corresponding figure of air dry unbleached pulp?

Mr. Lowe.—No, I cannot say.

President.—We can make an approximate calculation, can't we? You told me that the losses in the bleaching state, taking both the chemical and mechanical losses, accounted for 7 per cent.

Mr. Lowe.—Yes.

President.—And moisture accounts for about 10 per cent. as between air dry and bone dry?

Mr. Lowe.—Yes.

President.—So that between the two you have got 17 per cent., am I right?

Mr. Lowe.—Yes.

President.—Supposing for example I added 17 per cent. to your bone dry bleached figure I must get your air dry unbleached?

Mr. Lowe.—Yes.

President.—That would be correct?

Mr. Lowe.—Yes.

President.—It is only an approximate calculation. It comes to about 53 per cent.

Mr. Lowe.—To us this yield figure is really of greatest value when used for purposes of comparison with the previous years.

President.—That is to say, these yield figures have no absolute value. Their value is a comparative value and not an absolute value.

Mr. Lowe.—Quite.

President.—That is to say what you do with these figures is to run your eyes through the yield over a period of years. They are useful for determining the progress from your point of view.

Mr. Lowe.—Yes, to determine the progress that we have made.

President.—They are not really useful for determining the actual cost that you have incurred in a particular year. Am I right?

Mr. Lowe.—They are not of any use for determining the precise amount of cellulose in sabai grass.

President.—I am trying to see what really your cost of paper in terms of grass was in 1930 on your basis. In trying to assess the cost in terms of grass used, this percentage figure is not of great value for that particular purpose.

Mr. McLatchie.—No. It is the complete yield of sabai grass in our mill. It is the commercial yield. We know perfectly well that the cellulose content of sabai grass is about 39 per cent. into paper.

President.—It is obviously not on air dry basis?

Mr. McLatchie.—The pure unbleached cellulose yield is 41.6.

President.—Is that air dry or bone dry?

Mr. McLatchie.—Air dry. I am quoting a figure which would help us to find out whether Raneegunj yield has improved.

President.—If I may interrupt you, I am on a different point. For the time being I am greatly interested in the figures of yield that you show here. I want to satisfy myself whether these figures of yield that you give really express the actualities of the situation?

Mr. McLatchie.—That is what I am trying to explain. The way we work grass at Raneegunge is this. We take considerable care in boiling which has a material effect on the amount of cellulose that you get. Beyond that, we retain all the knots, hard boiled grass, etc., from our strainers. We also secure a great deal or a large proportion of fibre losses that may be incurred in the beater house and machines. We save our pickings at the grass sheds where we overhaul our grass. These pickings amount to quite a good percentage. It depends largely on the quality of grass that is used. I refer to such things as leaves, weeds, foreign grass which we paid for in our price for sabai grass. We retain all this and bale it and at convenient times boil the lot and make it into mill wrappers which permit the use of the dirty materials.

President.—That is to say, your large proportion of wrappers provides a class of output which enables you to increase your yield.

Mr. McLatchie.—That is an important factor in our yield. If you take the absolute cellulose which sabai grass would produce, it will not produce 42 per cent. into paper.

President.—Into paper in the sense of bleached paper?

Mr. McLatchie.—Yes. We use all these foreign materials which some throw away but we retain. Our commercial yield is 42 per cent. A portion of that you can say is refuse which we find in the grass. We use everything that we can.

President.—That is to say, when you take this 46 per cent. and convert it into air dry unbleached basis, you get a figure as high as 53. If a question were raised at that stage that the actual cellulose content of sabai grass on air dry basis was lower than 53, the answer would be that the difference between that and 53 would represent the foreign materials made use of in terms of paper.

Mr. McLatchie.—We have paid for it. It comes off our machine as paper.

President.—So that in considering the validity of your yield figure, what has to be considered is not the cellulose part of the grass but the grass material itself.

Mr. McLatchie.—What we have shown you is the working yield.

Mr. Lowe.—The whole of our paper is not 100 per cent. cellulose.

President.—That I understand.

Mr. McLatchie.—Probably you can realise that it is of tremendous value to have a paper in which you might use material which is not sabai grass but yet has been bought as sabai grass and paid for as such. Probably in the sabai grass it might be as high as 7 per cent. In the Nepal grass there is a very much lower percentage. In the Sahebgunge grass 7 per cent. is common. If we throw away that 7 per cent., it would affect our yield. We cannot afford to do it. What we do, therefore, is to store it, boil it and use it for wrappers. Wrappers are made on our No. 4 machine.

President.—May I ask this very simple question? Suppose instead of recovering all the foreign material from the grass that you have bought; suppose I collect 5 to 6 per cent. of refuse of any kind that I can find in the mills and mix it with a certain amount of pulp, can I get the same results?

Mr. McLatchie.—I don't quite follow the point.

President.—One element in this arrangement that you have for recovery of waste material is that you try to collect as much as you can of the material that you have bought as grass, you try to collect all that and you use it in the manufacture of a class of paper which will admit of this admixture.

Mr. McLatchie.—Yes, because we have already bought that refuse. It does not increase our expenses.

President.—It is perfectly true that the material you collect represents a certain quantity of output, but if I can collect a certain quantity of dirt without any outlet, am I economically better off? Is it really worth while getting this yield?

Mr. McLatchie.—If we do not use the material that we are talking of which we have paid for as grass, the financial loss would be considerable.

President.—You make 40 tons of wrappers per month of which 50 per cent. is secured from the refuse of grass.

Mr. McLatchie.—Refuse of grass and waste paper. If we throw that away we have got to buy material for the manufacture of wrappers at a very high price. You can't pick it up in quantities when it comes to a commercial proposition. There is no such thing as picking it up for nothing. You have to pay for it.

President.—How much of the total grass that you buy is likely to be this extraneous material that you are talking about?

Mr. McLatchie.—It is very difficult to say. I think unless something extraordinary happens our average is 5 to 6 per cent. 7 per cent. is what we allow for our grass from Sahebgunge. That is the only figure I have got definitely stated. In some cases it comes to a bit more. It largely depends on the contractor who has sent the grass.

Mr. Boag.—You mention 7 per cent. as the waste material in the grass from Sahebgunge; how exactly do you get this? Do you accept grass that contains not more than 7 per cent. of foreign matter?

Mr. McLatchie.—Yes. You cannot get grass 100 per cent. pure. You have got to accept from the suppliers a certain percentage of foreign material. The grass in question is jungle grass. 95 per cent. of our supplies is jungle grass. Government will not allow us to set fire to the small jungle growth and the

result is that the dead leaves remain on the ground and unfortunately for us a lot of these come to us with the grass. On top of that weeds are also on the increase. Anyhow you can never get 100 per cent. pure sabai grass.

President.—You were going to give us the figure of pure cellulose content in sabai grass.

Mr. McLatchie.—In 1924 we had considerable trouble with our grass yield and we got extremely nervous about it. We sent a sample of our grass to Dehra Dun and asked them to test it out and give us what they considered the actual value of our supplies of sabai grass without any waste. The result they gave was a pure unbleached yield of 41.77 per cent. then they converted it into paper and they gave us a yield of 38.21 per cent. That was the experiment they conducted for us in 1924-25. That I think you can take as the established cellulose yield for the particular quality of grass.

President.—In that case, supposing I took your figure of 6 or 7 per cent. as extraneous material in sabai, then taking it in terms, of unbleached pulp, 100 tons of pure clean grass yielded 41.77 tons of unbleached pulp?

Mr. McLatchie.—That is what you can get out of 100 tons of sabai grass in the condition in which it is delivered at the mills.

President.—From your experience about 6 to 7 per cent. of that is extraneous material?

Mr. McLatchie.—Yes.

President.—That is to say, let us take 93 tons of pure clean grass. From 93 tons of pure clean grass you get 41.77 per cent. of 93 tons as the quantity of unbleached pulp.

Mr. McLatchie.—That is right.

President.—There is 6 to 7 per cent. of extraneous material; how much of that can you utilise in your wrappers?

Mr. McLatchie.—All that.

President.—That is to say the whole of this 6 to 7 per cent. of extraneous material goes into wrappers?

Mr. McLatchie.—That is correct.

President.—In other words you would get out of 100 tons of sabai grass, in its original condition as it is delivered, 41.77 per cent. of 93 plus this 7 per cent. I am taking the whole yield in terms of rupees. 41.77 per cent. of 93 is approximately 38.

Mr. McLatchie.—Yes.

President.—What I am trying to get at is this. If you had 100 tons of grass as originally delivered at the mills you would get 93 tons of pure grass after deducting this 7 per cent. From that 93 you get 38 tons of unbleached pulp.

Mr. McLatchie.—Yes.

President.—There is this 6 to 7 per cent. of extraneous material which you can use for your wrappers—practically the whole of that. If you are able to utilise the whole of that you will get $38 + 7 = 45$ tons.

Mr. McLatchie.—Not that. 7 per cent. of dry material. We have got to boil it and there is loss of fibre.

President.—If you take that 7 per cent. of material, when you boil it, it does not give you 7 per cent. of paper?

Mr. McLatchie.—That is true. We have got to boil it and we can't get 7 per cent. paper; it would amount to about 3 per cent.

President.—Then you would get $38 \text{ plus } 3 = 41$ tons of paper.

Mr. McLatchie.—Yes.

President.—The real point is this. This 41.77 that they gave you at Dehra Dun was that on the air dry basis?

Mr. McLatchie.—Yes.

President.—Therefore if that analysis is correct you cannot get even with your wrappers more than 41 or 42 per cent.?

Mr. McLatchie.—Of course that is on one particular quality of grass only and it is taken that every class of grass will have 7 per cent. of waste material. For example we did not send our Chota Nagpur grass, only our Ramnagar grass.

President.—We are back on the old question as to how far on your system of accounting it is really possible for us to base accurate calculations of the yield of grass.

Mr. McLatchie.—Probably our standard figures which we have given here will vary considerably if it was some other grass. Take for example the Nepal grass. We have not the means of conducting a test purely on the cellulose content.

President.—May I ask a question with regard to the system of accounting? It worries me a lot. In your case obviously the most important material cost is grass?

Mr. McLatchie.—Yes.

President.—In your system of accounting the real question is, you get your finished paper which is a definite ascertainable quantity; you get also definite ascertainable quantities of the materials which you have put into your plant. These are definite figures?

Mr. McLatchie.—Yes.

President.—What you do is, you take each of these materials. Supposing there are four materials, A, B, C and D, you take A and apply the percentage based on experience so that B must yield so much, C must yield so much, D must yield so much, and then you take the difference between your finished output and whatever is left and put it on grass. It seems to me a queer system of accounting.

Mr. Lowe.—That is the method which is employed, and which does, provided you keep your figures standard for other materials, indicate to you whether fibre losses are really taking place.

Mr. McLatchie.—Supposing we have a month in which the kind of grass we get is normal and the materials also normal and we find that the grass yield at the end of the month, say, is 40 per cent, it means that a loss is occurring or possibly grass is being overboiled. Once it is established that it is possible to get a definite yield under certain conditions, we have to maintain it. One per cent. or two per cent. lower means considerable loss. Sometimes we have gone as low as 33 per cent., when we have been able to maintain 35 or 36 per cent. comfortably, and if a drop like that occurs we endeavour to find out where the loss has taken place. We do not state it to be the cellulose *sabai* grass yield. It is only a commercial yield worked on standard lines throughout.

President.—In a British mill where they use esparto grass, are accounts kept on this basis?

Mr. Lowe.—I think I am right in saying that the actual yield on the esparto is worked on the same principle. If we are using a variety of fibres, we cannot work out each month the yield of each individual fibre. It is necessary that you should know what the yield is approximately of your most important fibre.

President.—That is perfectly true. Your most important fibre material being grass, I should think that it is more important to get some kind of figure with regard to grass. Why not make some material other than grass like alum, rosin, etc., bear the sin of everybody else.

Mr. Lowe.—It is not a fibre. You might for argument's sake fix the grass at 35 per cent.

President.—Why not?

Mr. Lowe.—The varying fibre is grass. Grass has got to go through many stages to produce the pulp. Its progress through the Mill must be watched carefully, as 1 or 2 per cent. yield can be lost so quickly on account of mechanical losses or carelessness. If you fix grass at a standard yield, you

would never know what losses were taking place, whereas grass would be the material which was causing anxiety and you would know that it was the weak spot. It is the most important and costly material of any that we buy and therefore it is one that we must watch carefully. It is for that reason that we struggle to maintain our 42 per cent.

President.—It is a very very difficult situation from the Tariff Board's point of view. The way I would look at it is this. I probably feel more strongly in the Paper enquiry than I have felt in any other enquiry that the true test of efficiency is avoidance of waste.

Mr. Lowe.—Quite.

President.—You have got all kinds of leakages possible in a paper mill and unless you stop that, you don't get efficiency. If that is so, I should like to be able to place my finger fairly definitely on the most important material and say here there has been no leakage, because figures do show, but every figure that I touch on the grass yield is an elusive kind of figure, because it is the various results of various deductions.

Mr. Lowe.—We have got the cellulose figure of 38 per cent. The mill is getting 42 per cent. of the gross weight of grass into paper.

President.—42 per cent. after all is a theoretical figure.

Mr. Lowe.—It is not a theoretical figure. It is based on output.

President.—It is theoretical in the sense that it reflects at the same time the yield that you have got out of other materials. It does not stand by itself and indicate what you have got out of your grass absolutely.

Mr. Lowe.—It doesn't stand by itself as a figure of cellulose from the *sabai* grass. It stands as a figure of what we have secured from the grass we have paid for. It is not a cellulose yield figure from the *sabai* grass. From our own working we are unable to give this to you, but Dehra Dun tell us it is 41.77 per cent. in Unbleached Pulp or 38.21 per cent. into paper and we can say that our grass yield figure is the figure, taking into account our total grass consumption.

President.—Fortunately for us we are primarily concerned with bamboo in this enquiry and as far as bamboo is concerned we are on firmer ground.

Mr. Lowe.—We could never secure the waste material from bamboo that we get from grass. That we admit. Bamboo is a straightforward clean material. In bamboo there is not the foreign material.

President.—I want to ask you one or two questions about your grass areas. I understand from your replies that of the three areas which are open to you, Singbhum is worked by contractors.

Mr. McLatchie.—Singbhum Division is worked by contractors. We still have forests of our own in Singbhum. That is the Indian States. We have leases in 4 States.

President.—Those areas are still worked departmentally?

Mr. McLatchie.—Yes.

President.—Do you still bring your grass from there?

Mr. McLatchie.—Yes.

President.—The areas at Ramnagar you work yourself?

Mr. McLatchie.—Yes.

President.—What about Chota Nagpur?

Mr. McLatchie.—It is under a contractor. It is called Singbhum. Chota Nagpur is the name of the Division. Singbhum is the Government Forest Division.

President.—Taking your Ramnagar costs, that is your own departmental costs, I find your costs have come down very considerably since the last enquiry.

Mr. McLatchie.—Yes.

President.—And analysing your costs, I find the costs have dropped pretty nearly under every head. If you take for example the Ramnagar cost in 1924-25, 1930-31, cutting, carting and so on has come down from Rs. 23-12-0 to Rs. 20-6-0, railway freight from Rs. 16 to Rs. 13-2-6, rent and royalty from Rs. 16-14-0 to Rs. 12-11-0 and other charges from Rs. 4-3-0 to Rs. 3-7-0. How precisely do you account for these reductions under overhead?

Mr. McLatchie.—There can be no reduction under cutting and carting, because that is paid for by the maund. Any reduction is in what we pay to people performing the work.

President.—An increase in output would make no difference. It is a reduction in the actual rates paid for labour.

Mr. McLatchie.—We have reduced the carting charges. At Ramnagar we use a great many camels. In the past we used to bring loose grass. We have installed presses and that reduces the cost of transport on grass very considerably.

President.—What about the railway freight? Has the freight been reduced since 1924-25?

Mr. McLatchie.—The freight rates have been reduced. The Railway Company was approached in 1924-25 and they gave us a reduction. On the other hand some reduction is due to better supervision, packing, etc.

President.—That would not be included in railway freight?

Mr. McLatchie.—Yes, it would be, because we pay so much per wagon. If we can pack it better we can bring more grass in one wagon and that is a very important factor.

President.—Apart from any reduction in freight rates, could you simply by better packing get so big a reduction as from Rs. 16 to Rs. 13?

Mr. McLatchie.—I can not answer off-hand. We have certainly got a reduction in that direction.

President.—We regard this as rather an important point because of the variations in the costs of grass.

Mr. McLatchie.—I will look that up.

President.—Give us as accurately as you can the real explanation of the reductions which have occurred between 1924-25 and 1930-31 as regards your Ramnagar forests.

Mr. McLatchie.—The royalty is a matter of output.

President.—Yes.

Mr. McLatchie.—It includes supervision.

President.—Will you look up the question of railway freight and let me have a brief note?

Mr. McLatchie.—Yes. Since 1924 there is a small freight reduction.

President.—You are expecting a further reduction in your costs. How would you achieve a reduction? You have already achieved a further reduction in your costs.

Mr. McLatchie.—Our cost has come down from Rs. 1-15-7 which was the average cost in 1929-30 to Rs. 1-13-6 this year. There is a difference of As. 2 in that case.

President.—From the total works expenditure that you give in Form I, I gather that your average cost of grass is Rs. 52-7 in 1930.

Mr. McLatchie.—Slightly under Rs. 2 maund.

President.—Now the corresponding figure for 1931 would be Rs. 49.

Mr. McLatchie.—On this particular grass.

President.—This Rs. 52-7 is the average cost at which you get your grass from all these areas. What I want to know is in 1931 what would be the corresponding average cost of your grass. I should not be justified in

taking Rs. 3 off and saying that Rs. 49 would be your approximate cost in 1931.

Mr. McLatchie.—You are only dealing with one particular grass.

President.—Now the total amount of available grass in these areas is somewhere about 18,000 tons according to your estimate.

Mr. McLatchie.—Yes.

President.—So that if you wanted to increase your output of grass paper, the available supplies of grass in these areas would be quite sufficient to meet your requirements. But suppose you did as a matter of fact try to push up your output of grass paper to anything like that extent, would you be able to obtain sufficient grass?

Mr. McLatchie.—The areas that I have shown are areas which we can work through contractors at stated prices.

President.—You don't as a matter of fact anticipate any increase.

Mr. McLatchie.—No.

President.—Your position in that respect is different as I understand from your replies. We addressed the same question to Titaghur Paper Mills and there, when we suggested that they should frame an estimate of costs on the assumption that about 70 per cent. is grass, taking their present output in No. 1 mill, that more or less corresponds to the proportion of grass that we suggested, whereas in your case if we restricted you to 20 per cent. of imported pulp, the whole of that would go into your Badami, Brown and mill wrappers.

Mr. McLatchie.—Yes.

President.—Because you are using strong sulphite. If you meant to keep your connection in the market and sell your accustomed quantity with the present position in regard to gunnies, you would probably be able to use the whole of that quantity of imported pulp with strong sulphite for these unbleached papers with the result that you would be compelled to have 100 per cent. grass furnish which of course would be absurd.

Mr. McLatchie.—It really was not quite what you wanted.

President.—That was not the position which we clearly visualised, so that your costs would represent a situation which cannot possibly arise.

Mr. McLatchie.—Yes, in view of our using 20 per cent. of wood pulp in other qualities of paper.

President.—We come to Question 11. The results that you have obtained in regard to bamboo are not of course very important from a practical point of view because you are still very much in the experimental stage.

Mr. McLatchie.—Yes.

President.—But there are one or two things that I would like to ask you. I would first like to have an idea of the system that you are adopting at present for the mechanical treatment of bamboo. I should like to have an accurate statement of that for the purpose of record.

Mr. Lowe.—You mean for the crushing of bamboo?

President.—First of all, you get your bamboo delivered as split.

Mr. Lowe.—A portion of it we have received as split bamboo.

President.—What is the bamboo that you are using generally?

Mr. Lowe.—*Dendroclamus Strictus*; that is our main supply.

President.—That is rather bigger than *melocanna*?

Mr. Lowe.—Yes, slightly.

President.—And the bamboo which is not split goes straight into the crusher?

Mr. Lowe.—Yes.

President.—How many pairs of rolls are there in this new crusher that you have?

Mr. Lowe.—Three pairs.

President.—Each with different surface characteristics?

Mr. Lowe.—Yes.

President.—When the bamboo is fed into the crusher, the crusher not merely crushes; it also cuts or breaks it.

Mr. Lowe.—It breaks it. "Cut" would be a wrong term.

President.—What happens is that when the bamboo is fed into the first pair of rolls, that pair of rolls has the effect of not merely to some extent of crushing bamboo but also breaking it.

Mr. Lowe.—Yes.

President.—What happens in the first pair of rolls?

Mr. Lowe.—Breaking takes place in the first pair of rolls.

President.—It breaks it into pieces of what length?

Mr. Lowe.—2½ to 3 inches.

President.—It is these pieces that go into the second pair of rolls?

Mr. Lowe.—Yes.

President.—Would not there be some difficulty about the automatic passage of these broken pieces from the first pair to the second pair of rolls?

Mr. Lowe.—They go by gravity. The broken pieces of bamboo fall down the chute into the second pair of rolls, so that the feeding of the second pair of rolls is continuous.

President.—The whole thing goes automatically from the second into the third?

Mr. Lowe.—Yes. We have made a slight alteration there. In order to assist that, we have put in a small conveyor which turns on the top of the split bamboo and passes it into the last set of rolls.

President.—That is to say, the way it works now is that the broken pieces are fed into the second pair by gravity.

Mr. Lowe.—Yes.

President.—From the second into the 3rd pair, it is fed by a conveyor.

Mr. Lowe.—Yes, by a mechanical contrivance.

President.—It is really a make-shift?

Mr. Lowe.—No.

President.—It is really a permanent part of the show?

Mr. Lowe.—Yes.

President.—By mechanical arrangement, it is fed into the third.

Mr. Lowe.—Yes.

President.—When it emerges from the third pair of rolls, the crushing part of the work is done.

Mr. Lowe.—Yes.

President.—Then, what happens?

Mr. Lowe.—It goes straight into the digester.

President.—There is no process of dusting or cleaning?

Mr. Lowe.—No. I think that the term 'crushing' in the case of our bamboo machine is perhaps a bit wrong, because it not only crushes but has a tendency to open the fibres out. Crushing by sheer dead weight is only a portion of our treatment.

President.—That is to say, your crusher is really an attempt to combine crushing, cutting and splintering.

Mr. Lowe.—Yes.

President.—Those pieces that we saw when we were there were so to speak opened out for the penetration of liquor; that is a process that takes place in the crusher itself.

Mr. Lowe.—Yes, it does.

President.—As regards your digestion process, are you following the straightforward overhead process?

Mr. Lowe.—We did so shortly after the crushers were started but we have since had comparatively successful results with fractional boiling.

President.—The results shown on page 11 (2) were obtained on the overhead method.

Mr. Lowe.—Yes.

President.—And the figures that you are now getting on the fractional method are an improvement?

Mr. Lowe.—The principal improvement in our fractional experiments is in regard to bleach. We gave 15 per cent. At present we find that 14 per cent. bleach would do with the fractional digestion process.

President.—There is no reduction in the steaming time? Is it still ten hours?

Mr. Lowe.—There is a slight reduction in the steaming period. Caustic soda and sodium sulphate practically remain unchanged.

President.—How long have you been trying the fractional method?

Mr. Lowe.—For quite a week.

President.—Is it fractional sulphate or is it fractional pure soda process?

Mr. Lowe.—Fractional sulphate, although we term it sodium sulphide.

President.—You use both soda and sodium sulphide?

Mr. Lowe.—Yes.

President.—In what proportion?

Mr. Lowe.—1 to 2.

President.—66 per cent. of caustic?

Mr. Lowe.—Yes, and 33 per cent. of sodium sulphide. The proportion to the bamboo pulp is as is stated here 25 and 18·7.

President.—On air dry weight of bamboo?

Mr. Lowe.—Yes.

President.—How many digesters have you?

Mr. Lowe.—Six.

President.—How many of these are used for bamboo?

Mr. Lowe.—They are all being used at present in turn.

President.—In what way do you carry out the fractional process? The whole boiling is done in one digester?

Mr. Lowe.—Yes, in two stages.

President.—The first stage takes how many hours?

Mr. Lowe.—1 to 1½ hours.

President.—What is the pressure?

Mr. Lowe.—10 to 12 lbs.

President.—Could you give me that in centigrade?

Mr. Lowe.—10 lbs.=115°C.

President.—One hour at that pressure?

Mr. Lowe.—Yes.

President.—Then comes the next boiling?

Mr. Lowe.—Yes. The next boiling varies from 7 to 8 hours and a pressure of 45 lbs. is required. 45 lbs.=145°C.

President.—That is to say, it is 8 to 9 hours at an average pressure of 40 lbs.

Mr. Lowe.—Yes, 8 to 9 hours.

PAPER—I

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President.—That is some reduction on the figures which you had on the overhead process?

Mr. Lowe.—Yes.

President.—You have reduced the period by one hour and you have reduced the average pressure by about 5 lbs.

Mr. Lowe.—Yes.

President.—How many digesters at a time do you use for bamboo digestion?

Mr. Lowe.—As we are placed to-day we are using about 3 or 4 boilers at a time.

President.—Three boilers simultaneously deal with bamboo?

Mr. Lowe.—Yes.

President.—And the liquor is used on the counter-flow principle?

Mr. Lowe.—Yes.

President.—From one digester to another?

Mr. Lowe.—It is actually drained from the boiler and taken back to the storage tank and then passed into the second boiler.

President.—Why do you do that?

Mr. Lowe.—It is a matter of arrangement.

President.—The arrangement that you have now makes it necessary I suppose.

Mr. Lowe.—Yes. With the boilers that we have there is no method of putting liquor into the boiler except by opening the boiler.

President.—Would it be possible for you, Mr. McLatchie, to give me some idea of the variation of your coal consumption? You give a figure of 3.5 tons of coal per ton of paper?

Mr. McLatchie.—Yes.

President.—That is not exactly the kind of figure that would help us because it involves the economy that has resulted from imported pulp, whatever it is.

Mr. McLatchie.—Yes.

President.—What I want is this. If you could give me the consumption of coal per ton of unbleached pulp and then give me the quantity of coal required for converting one ton of unbleached pulp into paper, it would be useful.

Mr. McLatchie.—Do you want it divided up?

President.—I was suggesting that it should be divided, because that was the only way in which we could get actual figures. If I take the whole quantity of coal that you expended on the manufacture of paper from beginning to end, then I shall not be able to discount the economy that you have effected by the use of imported pulp. If you give me on the one hand the consumption of coal in the production of pulp and then if you give me the consumption of coal required for converting pulp into paper, that would give me a clearer idea.

Mr. McLatchie.—Yes.

President.—Would you be able to send a note?

Mr. McLatchie.—Yes.

President.—It is rather important because I find that the Tariff Board in 1925 had some strong things to say in respect of coal consumption?

Mr. McLatchie.—Yes, very strong things.

President.—Which helped the coal industry at the time. It would be rather interesting if we could say something on this point. I find that your soda recovery percentage is over 78 now.

Mr. McLatchie.—Yes. That is the figure we have given you for 12 months.

President.—That is 78·2 per cent. The corresponding figure for 1924 was 48·9 per cent.

Mr. McLatchie.—Yes.

President.—I take it that you have more or less reached the maximum amount of recovery?

Mr. McLatchie.—Yes.

President.—What is supposed to be the standard European practice?

Mr. McLatchie.—84 or 85. I have seen figures recently quoted as high as 92 to 95.

President.—Looking through the evidence that the Tariff Board collected in 1924 I find that at that time the normal practice was somewhere about 80.

Mr. McLatchie.—80 to 83 was considered so then and even to-day.

President.—Reading about that in trade journals, there is, I find, a tendency to fix the limit higher, and that, I take it, is due to improved methods of recovery that have been adopted.

Mr. McLatchie.—Yes.

President.—If it is possible to get a normal recovery of 85 per cent. on Esparto is there any reason why we should not get much the same figure out here provided the same methods are adopted?

Mr. McLatchie.—The greatest difficulty is that Sabai grass does not release the soda liquor as freely as Esparto.

President.—You mean it absorbs it?

Mr. McLatchie.—It retains it. In the case of Esparto grass we get the liquor drained from the boiler with one wash easily. The strong liquor drains away leaving a very much smaller percentage of soda to be dealt with in the wash than we can ever get from Sabai grass. In other words, soda clings to Sabai grass much more than it does to Esparto grass.

President.—So that we are justified in assuming that if the normal European practice in Esparto is 85 per cent., we should not be entitled to expect anything more than 80 per cent. out here?

Mr. McLatchie.—I should think that 80 per cent. is a very good recovery. The only way by which we might further improve our recovery and which we are thinking about, is by cutting our Sabai grass. Our grass is extremely long. Esparto grass is only about 18 inches and probably a good deal less.

President.—And Sabai?

Mr. McLatchie.—3 or 4 feet.

President.—How does the cutting improve the situation?

Mr. McLatchie.—Cutting improves it because it packs easier in the boiler and does not get into hanks. If it gets into hanks you would pick it out without being washed, whereas if you cut the grass it boils better, it washes better and there is the possibility that the recovery might improve.

President.—This figure of 78 that you get is on cut grass?

Mr. McLatchie.—No.

President.—So that there is some direction in which improvement is expected?

Mr. McLatchie.—Yes. We undertook cutting of Sabai grass as a result of our knowledge of Esparto. We have been fortunate enough to have worked Esparto grass at Raniganj, just a small quantity of it.

President.—What is the size of your digesters?

Mr. Lowe.—1½ tons and 2½ tons.

President.—They are rather small sizes, aren't they?

Mr. Lowe.—Yes, they are.

President.—They are not economical to work. I should think that digesters of that size would mean a somewhat uneconomical method of digestion?

Mr. Lowe.—We can make these economical.

President.—The results that you have got so far in the fractional method have got to be adjusted with reference to the capacity of the digesters, that is to say, supposing you used $2\frac{1}{2}$ or 3 ton or 4 ton digesters your results would be considerably better than they are now?

Mr. Lowe.—They probably will be better.

President.—So that in making a comparison of your results and others' results it may be necessary to take that factor into account. All the boilers we have seen are cylindrical; what is the advantage of a spherical boiler?

Mr. Lowe.—You eliminate the possibility of having anything undigested.

President.—Spherical is rather an older type, is it not?

Mr. Lowe.—It is difficult to say; there are spherical boilers even to-day being installed.

President.—But the vogue is cylindrical.

Mr. Lowe.—Yes, upright stationary.

President.—Yours is a revolving digester?

Mr. Lowe.—The $2\frac{1}{2}$ ton one is a cylindrical digester but it revolves on its own axis. It was a method which Mr. Raitt investigated.

President.—You have taken 10 years' lease of this Sambalpur area that you are referring to?

Mr. McLatchie.—Yes. We have taken a definite lease and since we have done so the forest department have been offering us what they think is a still better area. We have taken Sambalpur west and Sambalpur east is what now is being offered to us.

President.—Have there been any definite forest surveys in the area?

Mr. McLatchie.—Presumably there has been a fairly close survey because for the area they have leased to us they give a figure of 10,000 tons of bamboo, and that is not the entire forest. They say that the quantity of bamboo available annually in East Sambalpur area, they are now offering us, is something like 18,000 tons.

President.—On what kind of rotation is this estimated?

Mr. McLatchie.—Four or five years.

President.—Have you had any definite communication from Government giving these figures?

Mr. McLatchie.—We have definite communications from Government stating that there is 10,000 tons of bamboo in the west division. As regards the other division that we are now considering the Conservator of Forests has stated the figure for the number of bamboos as 40 lakhs available for extraction per annum. We have taken 400 bamboos to a ton. In another division in the same area he stated to us verbally that we can get an estimated outturn of 32 lakhs a year. Why they are offering this other division to us now is because they think that from the transport point of view it is more favourable than the western division. The 40 lakh area is only 12 miles from Sambalpur station and the 32 lakh area is 16 miles from Sambalpur station and we understand that there is a fairly decent road.

President.—How exactly is transport to be done from Sambalpur?

Mr. McLatchie.—In the area we have examined, that is this 10,000 ton area, the bamboo has to be carted.

President.—And then taken by rail to Raniganj?

Mr. McLatchie.—Yes.

President.—What is the distance by rail?

Mr. McLatchie.—About 300 miles.

President.—Have you worked out any approximate estimate of the cost of bamboo delivered at Raniganj, taking, say, the East Division?

Mr. McLatchie.—Not on the East Division. On the West Division we have worked out an approximate cost of Rs. 32 to Rs. 34 a ton delivered at the mill at ordinary railway freight which we secured from Sambalpur at Rs. 12-8-0 per ton. Since we secured these figures we have been given definitely to understand by the railways that when we are ready for extraction they are prepared to make a considerable reduction in the freight which is now ruling from that station to Raniganj.

President.—At the rates quoted now by the railways for the West Division you get a figure of Rs. 32 to Rs. 34 at the mills, if you get the East Division and get better railway rates . . .

Mr. McLatchie.—It is exactly the same despatching station.

President.—Then it is only the transport from the forest? As far as the estimates go, we can take Rs. 32 to Rs. 34 as the outside figure?

Mr. McLatchie.—The reduction in railway freight alone I think will be about Rs. 4 to 5 per ton.

President.—Rs. 32 which you have mentioned, is that your estimated figure for air dry bamboo?

Mr. McLatchie.—For bamboo as it comes out of the forest; moisture has got to be calculated on that.

President.—Can you give us a figure for air dry bamboo?

Mr. McLatchie.—The average moisture you can take as 18 per cent.

Mr. Boag.—You say you get a certain amount of bamboo from the contractors; how do you arrange with them?

Mr. McLatchie.—We dry the bamboo and extract the moisture from the bamboo—we get it bone dry—we allow them 10 per cent. and if there is 8 per cent. excess moisture in the bamboo that is deducted.

President.—That is to say the price that you give here is the price that you have worked for bone dry bamboo?

Mr. McLatchie.—Rs. 27 per ton of bone dry bamboo.

President.—From Rs. 27 if we deduct 10 per cent. we get air dry?

Mr. McLatchie.—Yes.

President.—If we want to know the corresponding price of bamboo as you get it from the forest we have got to deduct another 8 per cent. from the air dry?

Mr. McLatchie.—You can deduct 18 per cent. on the average as the moisture in the bamboo coming to Raniganj in May-June. If we take it to-day it would be about 25 per cent.

President.—Taking it for the whole season 18 per cent. is a reasonable amount?

Mr. McLatchie.—Yes.

President.—This quotation that you give for American pulp, is it for an actual purchase made by you?

Mr. McLatchie.—Yes.

President.—That is to say, is it simply a contract that you have made for future delivery?

Mr. McLatchie.—Yes, but not in any way in large quantities. It would be something like 600 tons.

President.—If for 600 tons you have got a quotation of £9-7-6 for a bigger consignment would you not get a better quotation?

Mr. McLatchie.—They have an excess of pulp and that is why they are offering pulp (which is quite good pulp, I won't say as good as Scandinavian

pulp) at such a low price. But the Scandinavian mills are still maintaining the price of £11.

President.—Are there considerable quantities of these coming in?

Mr. McLatchie.—I don't think so. These contracts are made in London by our London office.

President.—This is a quotation from your London office?

Mr. McLatchie.—Yes—a purchase.

President.—I suppose we should be justified in taking the current Scandinavian price as the standard price at the moment?

Mr. McLatchie.—Yes.

President.—Standard price for 1931 we may take as £10-10-0 c.i.f.?

Mr. McLatchie.—£10-10-0 to £10-15-0.

Mr. Boag.—Are these prices for Scandinavian pulp?

Mr. McLatchie.—£9-7-6 is American.

President.—Strong pulp £8-15-0, that is also American?

Mr. McLatchie.—Yes.

President.—If they are able to land these shipments out in India at these prices, have you any kind of definite evidence for suggesting that more shipments and in larger quantities might not come?

Mr. McLatchie.—No, I have not.

President.—From your impression of the situation do you still think that Scandinavia predominates the market?

Mr. McLatchie.—Yes.

President.—Have there been any suggestions made to you by the Titaghur Mills in regard to the Cuttack scheme?

Mr. McLatchie.—Yes. If the financial liability, etc., is feasible for us. We will further consider entering into the Cuttack scheme with the Titaghur Paper Mills. We have of course thought about it for a number of years and talked matters over with them.

President.—If that scheme matured and if conditions were definitely favourable, then you would rather draw your supplies of bamboo pulp from the Cuttack mill rather than work your own area in Sambalpur.

Mr. McLatchie.—If the Cuttack scheme materializes and produces pulp without it being necessary for us to do so at Raniganj, we should possibly transfer our requirements to the joint mill which we, along with Titaghur, might establish.

President.—Anyway it is far too much in the stage of experiment.

Mr. McLatchie.—We still have to find a lot of bamboo pulp beside what we can make ourselves. We have a big gap to fill up.

President.—Even if you are able to make all the bamboo pulp for which you have the capacity in your plant, even then you might need to buy about 2,000 tons of pulp from outside.

Mr. McLatchie.—Yes, 2,000 to 3,000 tons. The idea is naturally to develop it along with the Titaghur Mills.

President.—You speak on page 25 of the possibility of packing papers being made out of bamboo pulp. The kinds of packing paper that you are thinking of are kraft.

Mr. McLatchie.—Imitation kraft. There is a difference between kraft and imitation kraft.

President.—Do you expect that genuine kraft would be made satisfactorily here out of bamboo pulp?

Mr. McLatchie.—It is rather difficult to state from the limited amount of experiments we have done. It appears to us that the bamboo fibre is such that there is a possibility of being able to make use of it largely in kraft.

President.—What about Manilla?

Mr. McLatchie.—You mean that type of strong paper?

President.—Yes. Could you use bamboo for that?

Mr. McLatchie.—We don't say for one moment that it is possible. We only say that from the point of view of fibre and the look of the paper we believe that there is a possibility.

President.—Supposing for argument's sake we accepted your statement that based on the fibre examination there was a considerable probability that bamboo pulp might be used for imitation kraft, what proportion would the imitation kraft and papers of that class form to the total packing paper imported into this country. Taking 1929-30?

Mr. McLatchie.—14,000 tons. To-day we make a conservative estimate of about 8,000 to 9,000 tons of kraft paper at least of those classes of paper which are imported in large quantities.

President.—You would say that approximately about $\frac{1}{3}$ of the packing paper imported into India are of the classes for which bamboo pulp might be used.

Mr. McLatchie.—Yes.

President.—Supposing a suggestion of that kind for argument's sake was seriously considered, how exactly would the necessary distinction be made for customs purposes? Supposing, for example, it was decided to continue protection on the assumption that bamboo pulp could be utilised and an additional class of paper is also brought under the protective scheme—that additional paper is imitation kraft and packing papers corresponding to that class—how exactly would you make the necessary discrimination among the classes of paper?

Mr. McLatchie.—We call it kraft which is a standard paper.

President.—Is genuine kraft not different from imitation kraft?

Mr. McLatchie.—I am saying it is different. They are both used for the same purpose and if it was decided that kraft was to receive protection, we would have to protect all kraft paper.

President.—I don't follow.

Mr. McLatchie.—Protection would have to be given to kraft packing paper irrespective of whether it is what is known as genuine kraft or imitation kraft.

President.—The classes of packing paper which are not covered by kraft, are they superior paper?

Mr. McLatchie.—Presumably they are cheap mechanical packing paper.

President.—To which the test of 65 per cent. would apply.

Mr. McLatchie.—Probably very largely it would apply.

President.—You admit with regard to your head office expenses and managing commission, that your rates are higher than the rates which are customary.

Mr. McLatchie.—In regard to commission only.

President.—That is to say in making an estimate of the fair selling price for the Indian industry as we calculate it, a figure on the line on which your rates are fixed would be much too high.

Mr. McLatchie.—It is the usual 10 per cent.

President.—What is the Calcutta practice in this matter?

Mr. McLatchie.—It is 10 per cent.

President.—10 per cent. of the profits before depreciation?

Mr. McLatchie.—Yes.

President.—In our other enquiries we have found about 10 per cent. profit before depreciation is the recognised rate on the Calcutta side.

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—In answer to question 1, you say under D that there is one Indian and four British Directors. May I know when that one Indian was appointed as a Director.

Mr. McLatchie.—He has been our Director for the last 10 or 11 years.

Mr. Rahimtoola.—Is he a nominee of the Managing Agents or the shareholders' representative?

Mr. McLatchie.—Shareholders' representative.

Mr. Rahimtoola.—You state here that there are no Indians on the superior management of the mill. May I know whether you have made any efforts to get anybody on the superior management?

Mr. McLatchie.—We have made efforts and we are making efforts in connection with our apprentices. That is the line on which we are working. Their agreements are such that if they can go through their training and complete it, ultimately they will receive a post which is on the administrative side of the Company.

Mr. Rahimtoola.—That question is exhaustively dealt with by you in reply to question No. 22. As far as I know you have made no special efforts to get anybody in the superior management since protection was given to you in 1925.

Mr. McLatchie.—No.

Mr. Rahimtoola.—I think it must be made clear to you, Gentlemen, that it is very difficult for a Tariff Board to consider the question of protection when this question which is one of the essential questions laid down by the Fiscal Commission is not going to be fulfilled by the mills who want or desire protection and who have already enjoyed protection. You say that your crusher which you have installed has got a makers' guarantee. Have you got any other machinery from those makers?

Mr. McLatchie.—No.

Mr. Rahimtoola.—You say that from your experience you think that that guarantee is likely to be fulfilled.

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—May I know what experience you have?

Mr. Lowe.—Our practical experience of its working at the mills.

Mr. Rahimtoola.—I was just told that the crusher had just been installed.

Mr. Lowe.—We have had a certain amount of experience since the machine was installed.

Mr. Rahimtoola.—As a matter of fact when the Tariff Board visited the mill they were informed that the plant was only installed two or three days ago and it is hardly an experience for you to say that the expectations are going to be fulfilled.

Mr. Lowe.—The machine is put to certain very definite tests. If it does not stand those tests, then we conclude that the makers' guarantee will not be substantiated. But when we find that the machine has stood the heaviest tests that it is submitted to, we assume that all things being well, it will come up to the makers' guarantee.

Mr. Rahimtoola.—You have no personal experience of the makers in respect of any other machinery in your mill?

Mr. Lowe.—No.

Mr. Rahimtoola.—You say your primary materials also include English clay, Indian and yellow clay. May I know what exactly it means? Are you using primary as primary materials along with grass.

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—You make paper out of these.

Mr. McLatchie.—No.

Mr. Rahimtoola.—It means that these must be considered as auxiliary materials.

Mr. Lowe.—Yes.

Mr. Rahimtoola.—In answer to question No. 4 you gave us to understand that the term semi-bleached is a misnomer.

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—Do I understand that if you had not put this term you would have found difficulty in inducing Government to purchase your paper?

Mr. McLatchie.—Government call it semi-bleached. We know what they mean by semi-bleached, and tender samples accordingly.

Mr. Rahimtoola.—If you had not called it semi-bleached, Government would not have gone in for this class of paper.

Mr. McLatchie.—Government fix a standard. It is not our standard. We tender to Government for year to year but Government fix their original standards.

Mr. Rahimtoola.—To put it rightly, may I say that this semi-bleached is not the same as it is understood by the other mills.

Mr. McLatchie.—We know it as semi-bleached, but the point is that if we say semi-bleached, you may imagine that it is only half bleached, but it is not so.

Mr. Rahimtoola.—It is 100 per cent. bleached.

Mr. McLatchie.—Practically it is almost as highly bleached as any white printing.

Mr. Rahimtoola.—As regards the chief classes of paper you are producing, 50 per cent. of that is white printing, and 30 per cent. of that is common badami and browns.

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—Those are most of the classes on which you are concentrating.

Mr. McLatchie.—Yes. We have 2½ machines working on white papers and the balance on badami browns and wrappers. If orders for badami and wrappers are short, the half machine is taken off out of this work and put on white papers.

Mr. Rahimtoola.—In your reply to question No. 6 you say "We would further mention that our bamboo figures should be accepted with reserve as our experiments have not been on a sufficiently large scale to be conclusive". But you give 2 tons 10 cwts. as the quantity of bamboo required to make one ton of paper. Is that your experience?

Mr. McLatchie.—We ask you to take it with considerable reserve.

Mr. Rahimtoola.—At present your experience is that?

Mr. McLatchie.—I am afraid we cannot confirm it.

Mr. Rahimtoola.—You cannot confirm it?

Mr. McLatchie.—Not yet. We have taken a figure which we understand to be the general practice. Approximately that is the general standard.

Mr. Rahimtoola.—You have no figure at your disposal at present?

Mr. McLatchie.—No definite yield figure.

Mr. Rahimtoola.—On page 9, I find that as regards the Ramnagar field, the amount shown against "other charges" in 1924-25 was Rs. 4-3-6 and in 1927-28 only Rs. 3, and in 1930-31 it has again gone up to Rs. 3-7. Will you tell us why?

Mr. McLatchie.—That is entirely due to the variation in outturn. Those figures are calculated on the outturn.

Mr. Rahimtoola.—As regards Nagpur Field, the amount shown against "other charges" in 1924-25 was Rs. 3-8-2 and in 1930-31 only Re. 1-8-11.

Mr. McLatchie.—In the Nagpur field, until 1928, we had an Assistant in charge of the area. He left us in 1928.

Mr. Rahimtoola.—That accounts for the reduction?

Mr. McLatchie.—Yes. This expenditure shewn here is expenditure incurred in repairs to godown, etc. It is not a labour charge, whereas in the other one there was a certain amount of labour charge—that was the pay of the Assistant.

Mr. Rahimtoola.—In reply to Question 10, you say “We consider the railway freights offered to the industry are reasonable for the large traffic carried”. Do you mean the freights on the auxiliary materials?

Mr. McLatchie.—We mean in every way.

Mr. Rahimtoola.—Even regarding paper?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—Have you not received any circular from the East Indian Railway or any other railway saying that they are going to increase the rates?

Mr. McLatchie.—Unfortunately we have.

Mr. Rahimtoola.—In the light of that, do you wish to modify that statement or do you consider even the revised rates reasonable?

Mr. McLatchie.—We must do that. The rates that the Railways have proposed represent in some cases an increase of as much as 58 per cent. We cannot call that reasonable. That is the case from Howrah right up to the places where they come into competition with the other railways on the other side of India which are transporting paper from Karachi and Bombay, and to those places the differences are reduced. In other words the freight rates to the areas to which we send most of our goods have considerably increased. In the other areas where competition comes from the other railways the increase drops down to 13 per cent. It ranges from 58 per cent. to 13 per cent.

Mr. Rahimtoola.—So far as those places where you have to send most of your paper are concerned, you have to pay a considerable increase?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—As regards your reply to Question 11, you have only recently taken up the question of bamboo.

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—In spite of the fact that protection was granted in 1925 and the mills were asked to do the exploratory work in connection with bamboo?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—You say that your principal difficulty has been to find out a crusher for the bamboo?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—Since when did you begin to consider the question of bamboo?

Mr. McLatchie.—We started considering the question of bamboo probably in the year 1926. Our difficulty has been that our mill as it was placed then was in no position to undertake the manufacture of bamboo until such time as another power plant and bleaching plant could be installed. Crushing is the very last thing in the operation to be arranged for. It is no good crushing bamboo when we cannot do anything with it,—when we have not got power, steam or other auxiliary plant to carry on the process; so that to start with, we had to lay down a new steam plant, an electrical power plant and a new bleaching plant to deal with bamboo. The last thing has been the crusher.

Mr. Rahimtoola.—I understand from this statement that you have spent Rs. 4,15,000 purely on the question of installing plants suitable for bamboo?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—All that took time?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—In reply to Question 14 you have stated that you will be using 150 tons monthly of wood pulp.

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—Is that a permanent requirement of yours?

Mr. McLatchie.—That is a permanent requirement until such time as we can replace it by the bamboo pulp that we hope to make jointly at Cuttack or until we can secure bamboo pulp from the British Development Trust. As far as we ourselves are concerned we think that the arrangements that we are making now for the manufacture of bamboo pulp is for our maximum capacity and we would prefer to secure the balance from some Indian company that may be making it here.

Mr. Rahimtoola.—Do you expect in course of time to do away altogether with the requirements of imported wood pulp?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—You gave us to understand that you would still be requiring wood pulp for emergency purposes.

Mr. McLatchie.—We should require it for emergency purposes, unless we can replace the emergency supply by stocking Indian bamboo pulp.

Mr. Rahimtoola.—Even for storing purposes you would be able to use bamboo pulp if it was available?

Mr. McLatchie.—Yes, if it is available in the same condition in which we at present import wood pulp. You know that it comes in sheets, and is in the ideal condition for storing.

Mr. Rahimtoola.—If that is so, I cannot understand the last paragraph of your answer to Question 14—“Supplies of imported wood pulp have been and will always be required to maintain and secure output and also to allow our mills to work on the most economic level”.

Mr. McLatchie.—There is a slight doubt. To start with, we have not gone so far into the question of bamboo as possibly others have. It is just possible that we may require imported wood pulp for special qualities of paper for which bamboo pulp will not be suitable. The essential thing is to have materials available in the country which will enable us to keep our mills running to capacity if any difficulty comes about.

Mr. Rahimtoola.—I quite understand that you want it for emergency purposes. But you say that supplies of imported wood pulp have been, and will always be required to maintain and secure output, and also to allow our mills to work on the most economical level. That is why I ask you whether you still doubt the success of bamboo?

Mr. McLatchie.—Not by any means. We have not had sufficient experience to say that the bamboo pulp will meet every requirement. We believe that it will meet the great majority of conditions, but whether it will meet every condition remains to be proved.

Mr. Rahimtoola.—You don't consider the present prices of wood pulp as anything like stationary?

Mr. McLatchie.—No. We believe that as soon as the trade depression departs and the demand at home increases the price of wood pulp also will go up.

Mr. Rahimtoola.—Do you think that the present prices of wood pulp are unremunerative?

Mr. McLatchie.—According to our advices, they are distinctly so. If you like I will read extracts from various letters we have received?

Mr. Rahimtoola.—Are they authentic and authoritative?

Mr. McLatchie.—They are from our London correspondents.

Mr. Rahimtoola.—In reply to Question 16 you say “The demands made by the Jute Mills for old and torn gunny, increased the market price to such an extent as to prohibit its use for Badami and Brown wrapping papers”. Now your experiments have shewn that you can replace that by bamboo pulp?

Mr. McLatchie.—Yes. In fact, our manufacture of bamboo pulp until quite recently (and which we are now bleaching) was used principally in those papers.

Mr. Rahimtoola.—You are at present not using the Indian China clay?

Mr. McLatchie.—Not to the extent that some others are using it; not because we don't wish to use it but because of the quality. The quality has improved considerably lately. Our difficulty is that the plant at Raneegunge for clay mixing is limited and designed very largely for the use of imported China clay which is very much cleaner than the Indian China clay.

Mr. Rahimtoola.—According to you, you have to put in a strainer—a special strainer plant?

Mr. McLatchie.—We are putting in an entirely new plant.

Mr. Rahimtoola.—Just to use the Indian China clay?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—Then all your requirements will be met by the Indian China clay?

Mr. McLatchie.—Yes. There is no reason why they should not be. Even to-day if we had a large enough plant, we could make use of Indian clay for at least a considerable proportion of our requirements.

Mr. Rahimtoola.—As regards Question 22: I would like to know what is the period of apprenticeship you have fixed?

Mr. McLatchie.—5 years.

Mr. Rahimtoola.—Most of the boys are likely to be employed in the mill?

Mr. McLatchie.—Under the indenture we offer them definite employment.

Mr. Rahimtoola.—Suppose a man is trained and has got a technical degree in Europe has he still to go through this five years period?

Mr. McLatchie.—A degree won't help him very much.

Mr. Rahimtoola.—Suppose he is a chemist or suppose he is an electrical engineer?

Mr. McLatchie.—If he has had training then he is suitable.

Mr. Rahimtoola.—Over and above the period which he puts in at any recognized College would you take him straight off without putting him through the five years period?

Mr. McLatchie.—I had better explain that the five years training is for apprentices on the paper making side of the mill where long training is necessary. If we get a man coming along who is a chemist he is put on the chemist side of the business straight away without any sort of lengthy apprenticeship. It is purely a matter then of his getting used to the materials which we are using.

Mr. Rahimtoola.—I understand from your statement here that at present you are undertaking the training of seven men in the electrical department, six in the engineering department and 10 in the engineering shops. I can't understand why graduates for this class of work are not found suitable.

Mr. McLatchie.—They are not graduates in the sense of apprenticeship for paper making.

Mr. Rahimtoola.—My point is this. You can only take apprentices for that class of work which is difficult and which people have not handled before, but these are departments for which you can get properly trained and qualified men and I don't understand what is the special training you are giving them and why for such a long period?

Mr. McLatchie.—We don't limit the period of training on the engineering side but only on the paper mill side—where they are trained for so long in the beater house, so long on the paper machines, so long on the chemical section, etc.

Mr. Rahimtoola.—What is your experience of these youths? Are they inclined to put in hard work?

Mr. McLatchie.—The lads we have now are certainly the best we have had so far. Some of them have done 18 months.

Mr. Rahimtoola.—Are you at present producing any kraft paper or imitation kraft paper?

Mr. McLatchie.—No.

Mr. Rahimtoola.—Have you any personal experience of this class of paper?

Mr. McLatchie.—Not the making of it. We are only judging from the look of the fibre that there is a possibility of bamboo being suitable for that class of paper which has come into great prominence during the past five years.

Mr. Rahimtoola.—Without making it you want us to get this class of paper protected?

Mr. McLatchie.—It is only a suggestion. I think we go on to suggest that when the Indian mills are in a position to convince the Government and the public then they should receive protection.

Mr. Rahimtoola.—That means that you want us to make a suggestion to Government that Government should be empowered to legislate on the subject?

Mr. McLatchie.—Yes, as soon as the mills are able to convince Government that they are in a position to manufacture this class of paper.

Mr. Rahimtoola.—You state in answer to Question 25 that "In the Punjab two projects are in hand for the manufacture of strawboards, which with encouragement and assistance for a limited period would, we feel sure, bring into existence a flourishing enterprise". May I know whether your information is first hand?

Mr. McLatchie.—We know that the Punjab is the best situated province for the manufacture of strawboards. Only a certain kind of straw is suitable for that purpose. Paddy straw is unsuitable, it must be wheatstraw and both the projects that we have heard of in the Punjab are situated in the wheat producing area which is the most suitable locality for the manufacture of strawboards.

Mr. Rahimtoola.—Have you personally seen any of these places?

Mr. McLatchie.—No. But seeing that the material is there we imagine that the chances are that the projects would be successful.

Mr. Rahimtoola.—You are against a duty on wood pulp?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—And your ground is that it will work as a detriment?

Mr. McLatchie.—Yes. Until such time as the bamboo industry is in such force as to meet the pulp requirements of the various paper mills, we consider that wood pulp should be left unprotected.

Mr. Rahimtoola.—Would you suggest some method by which bamboo pulp could be given encouragement?

Mr. McLatchie.—As soon as there is a mill in the country capable of meeting the requirements of the Indian mills then would be the time for Government to give some form of protection to the making of paper only from Indian pulp.

Mr. Rahimtoola.—According to you if a sufficient quantity of bamboo pulp was available to-day you would not object to a duty on wood pulp?

Mr. McLatchie.—That is what it amounts to.

Mr. Rahimtoola.—You don't think that as you are situated at present you would be able to capture the markets in Bombay and Rangoon for paper?

Mr. McLatchie.—I don't know what you mean by "capturing".

Mr. Rahimtoola.—I mean whether you can sell your paper in competition with imported ones in those places.

Mr. McLatchie.—That is so, unless we reduce the price considerably to meet that competition.

Mr. Rahimtoola.—You state that the quality of paper made out of bamboo pulp and that out of wood pulp is practically the same.

Mr. McLatchie.—That is our experience.

Mr. Rahimtoola.—In reply to Question 36 you state that your bazar sales in badami and printing papers are very much on the decline these qualities having been replaced by inferior mechanical papers. May I know exactly what is the difficulty? Is it due to the fibre content?

Mr. McLatchie.—Yes, fibre content of the mechanical wood pulp.

Mr. Rahimtoola.—And therefore you want the fibre content to be raised to 75 per cent.?

Mr. McLatchie.—We are asking for that.

Mr. Rahimtoola.—In the qualities of paper that you manufacture you were manufacturing 1,454 tons of Brown before which has now gone down to 1,100 tons. Is that due to this competition?

Mr. McLatchie.—Yes, and even that tonnage is only maintained by the large contract we have with Government. The badami and brown are largely made for Government requirements; the percentage for the bazar is now extremely small.

President.—That is to say, the quantities of these papers that you make depends upon orders that you get from Government?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—The competition is confined to the bazar?

Mr. McLatchie.—Yes. The use of Indian badami is on the wane as far as the bazar is concerned. It is the Government and the Indian States which are maintaining our average at the present moment in badami and browns.

Mr. Rahimtoola.—In answer to Question 39 you say that the total amount spent by you on plants and buildings from 1924 till to-day was Rs. 11,75,000 out of which Rs. 4,15,000 was entirely for bamboo.

Mr. McLatchie.—The rest is for paper and grass pulp plants.

President.—The rest of that is mainly for the boiling plant?

Mr. McLatchie.—Straining plant, pulping plant and soda plant.

President.—What was the cost of your new boilers?

Mr. McLatchie.—About Rs. 6,20,000.

Mr. Rahimtoola.—In answer to Question 49 you say that you have been able to secure grass at 3 annas per maund less than in 1930.

Mr. McLatchie.—Yes. That statement is made because our Ramnagar grass has come down by 2 annas a maund and a considerable reduction has also been made on our Nagpur forest area and I think the average is approximately 3 annas a maund.

Mr. Rahimtoola.—As regards Question 51, is there any buying commission which the Managing Agents charge?

Mr. McLatchie.—The Managing Agents have no buying commission list, their London house make such a charge.

Mr. Rahimtoola.—They charge 2½ per cent.?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—You have got a London firm?

Mr. McLatchie.—Yes.

Mr. Rahimtoola.—And this is a Company of which the head office is in London?

Mr. McLatchie.—The Managing Agents' London correspondents are Alexander Lawrie and Company, Limited. The partners in the London firm are partners of the Calcutta firm.

Mr. Boag.—In answer to Question 38 you say, when you are describing the new plant, that with certain parts of it such as the new strainers,

special care has been taken to make them suitable to deal with bamboo. In 38 (4) for example you say that you have replaced a large battery of flat strainers which although suitable for sabai grass in your opinion would not deal efficiently with bamboo. Can you explain exactly what the difference between the two strainers is?

Mr. Lowe.—The rotary strainers allow the working of a good deal of water with the fibre. This cannot be done with flat strainers. Rotary strainers are so designed as to permit heavy material to go down into the auxiliary strainers. That is not common practice with flat strainers. For instance from the rotary strainer we draw quite a large proportion of fibre which is dirty and has been rejected by the rotary strainer. It passes from the rotary to the auxiliary strainer and is there again strained.

Mr. Boag.—That explains the difference between the two kinds of strainers. I have not been able to gather why the rotary strainer is more suitable for bamboo?

Mr. Lowe.—We find that rotary strainers are inclined to roll the grass fibre, whereas bamboo does not seem to be subject to that action. The drum of rotary strainers takes up the grass and is inclined to roll it and so prevents it from passing through the strainer drum. The action of the flat strainer is not such as will produce this characteristic. Rotary strainers, having a larger working surface permit the use of a finely cut strainer plate, which though desirable for all fibres cannot be adopted for sabai grass. Roots, stones, and long sticks, all common foreign materials found in Sabai grass—quickly choke a rotary strainer and cause frequent stoppages, but if grass is passed through flat strainers, the foreign materials can be easily removed from the top of the plates without stopping the plant.

President.—Suppose you use flat strainers for bamboo, what happens?

Mr. Lowe.—There would be heavier losses, as a flat strainer wastes more fibre than does a well designed rotary strainer, working in conjunction with good auxiliary strainers.

President.—You have got heavier losses on the flat strainer, whether you work on grass or bamboo.

Mr. Lowe.—Yes.

President.—As far as grass is concerned, the rotary strainer may act in some ways as a handicap.

Mr. Lowe.—Yes.

President.—It is better for grass to be handled in a flat strainer.

Mr. Lowe.—Yes.

President.—Would it not be better for bamboo to be treated in a flat strainer for the same reason?

Mr. Lowe.—No.

Mr. Boag.—As I understand it now you prefer the rotary strainer because it avoids certain losses which the flat strainer gives.

Mr. Lowe.—Yes.

Mr. Boag.—As far as bamboo is concerned, the rotary strainer is not open to the same objection as in the case of grass. You say the rotary strainer is not suitable to grass.

Mr. Lowe.—It is open to certain objections.

Mr. Boag.—But those objections do not apply when you use bamboo.

Mr. Lowe.—Quite.

Mr. Boag.—You say you have designed your new bleaching towers with an eye to the use of bamboo.

Mr. Lowe.—Entirely. We have a bleaching plant for grass available known as potchers.

Mr. Boag.—This is entirely an additional plant for bamboo?

Mr. Lowe.—Yes. We have had no bleaching plant for bamboo until we installed these towers.

Mr. Boag.—The new white straining plant is entirely for bamboo.

Mr. McLatchie.—Yes, that is also entirely for bamboo.

Mr. Boag.—Working in connection with the new bleaching plant?

Mr. McLatchie.—Yes.

President.—Green refers to unbleached and white refers to bleached?

Mr. Lowe.—Yes.

* *Mr. Rahimtoola.*—May I know whether the Forest Research Institute has been useful to the Paper industry?

Mr. McLatchie.—Most useful.

Mr. Rahimtoola.—Do you think that its existence is in the best interests of the industry?

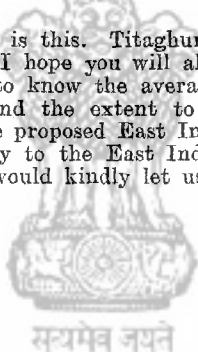
Mr. McLatchie.—Yes.

President.—There are two statements which I have asked the other mills to work out and I shall be obliged if you will also work them out. One is a statement showing the costs of converting unbleached pulp into paper per ton of unbleached pulp for the years 1924 and 1930 and also a statement explaining the reasons for variations between those two years.

Mr. McLatchie.—Yes.

President.—Another point is this. Titagbur and Naihati have promised to send us a statement and I hope you will also be able to send a similar statement to us. We want to know the average freight that you incurred on finished paper in 1930 and the extent to which that average freight would have been raised if the proposed East Indian Railway rates had been applicable in 1930 not merely to the East Indian Railway, but to all the railways concerned. If you would kindly let us have them in the course of a week, it would be useful.

Mr. McLatchie.—Yes.



Upper India Couper Paper Mills Co., Ltd., Lucknow.

A--WRITTEN.

(1) *Letter No. 21443, dated 1st May, 1931.*

With reference to the Resolution of the Government of India, Department of Commerce, dated 26th March, 1931, we have the honour to represent the following for your consideration in connection with the enquiry which is going to be held by you on the question of the renewal of the Protection to Paper Industry.

2. In order to gain the objects for which the above enactment was made, we submit that by far the best course certainly would be to maintain the conditions which the above Act has created for the Paper Industry and under which it would be possible for the Industry to continue its development, so that that portion of the existing Industry, which is the best suited on account of locality and other circumstances may gradually grow and be transformed into the Bamboo Section of the Industry, and similarly another part into a section using Sabai grass either alone or in combination with Bamboo pulp, rags, etc., and thus corresponding with that important section of the British Industry which uses Esparto, Wood Pulp and Rags. There is little doubt that without the measure of protection which the Act confers on the Paper Industry, the latter would have been in a bad way, thereby not only reducing the chances of the Bamboo Pulp Industry but rendering it practically impossible for the distinct advance which has already been made in that direction. We submit that if the protection be withdrawn at this stage not only there would be the risk of much of the work that has been done being lost but future advance would be extremely difficult.

3. Paper and Pulp Industry is an industry of national importance. The industry itself gives direct employment to a large number of persons. On it depends either wholly or in part a number of other industries of the country. The industry itself has got great possibilities for expansion. The home market is continually expanding. We maintain that the continuance for a while of the timely help which the expiring Act gives to the Industry would ultimately be returned to the community many times over.

4. This Company is a purely Indian concern and its Mill in Lucknow is the oldest existing Paper Mill and is run wholly by Indian labour and under Indian Management, and draws more than 90 per cent. of its raw materials from Indian sources. Its financial condition is very sound, and given temporary relief during the period of transition, is sure to develop into a prosperous industry.

5. Though the Tariff Board in their last enquiry held that "the existing paper mills which use Sabai grass do not satisfy the conditions laid down by the Fiscal Commission and that their needs are therefore irrelevant in considering the claim to protection", yet they make an exception in the case of one locality in Northern India, namely, the site selected by the Punjab Paper and Pulp Mills at Saharanpur. We submit that so far as site is concerned, the Lucknow Paper Mill is not less favourably situated than the former. If grass be nearer to them, coal is nearer to us, and for a ton of paper (including pulp), the quantity of coal used is double the quantity of Sabai grass. We are in a situation where neither coal nor grass nor again the big markets of Upper India are very far.

6. This mill uses in large quantities two other raw materials, namely, rags and hemp, which admittedly possess superior paper making qualities like strength, durability, bulk, opacity, etc. The demand is bound to grow in this country for that class of paper which is used for more or less permanent purposes. Our mill is in a best position to manufacture paper of that class.

7. Since the last Tariff Enquiry in 1924, two other Paper Mills, in addition to the Naihati Paper Mills which had already been using Bamboo by the Sulphite Process, have started using this raw material by the other

important process (Soda Process), namely, the Kankinara Paper Mills belonging to the Titaghur Paper Mills Co., Ltd., and the Andhra Paper Mills at Rajahmundry. From the information which we have received, it is evident that a distinct progress has been made in this direction. Our own interest in the development of Bamboo Pulp Industry lies in the fact that though the considerations of freight may rule out in our case the possibility of using Bamboo for pulp making, it may be quite feasible for us to obtain supplies of Bamboo pulp from down country sources at economical rates. Besides, the demand on Sabai grass from the Southern mills will gradually diminish and it would then be possible for us to obtain supplies of that grass at a much cheaper rate than we are getting at present and for the use of which we are favourably situated.

8. The Lucknow Paper Mills are being re-organised, renovated and extended and several lacs of rupees have already been spent for the purpose. Modern Power and Steam Plants have already been purchased and are being erected into a Central Power Station which will supply power not only to the existing machines but also to a modern up-to-date machine for the purchase of which arrangements are being made. When the whole scheme has been carried out, we shall be in a position to look confidently into the future. We would, therefore, request the Board that, in order to help us over the period of transition, the Board may kindly recommend that not only the present measure of protection be continued for a further term of years, say, 10 years, but its scope be extended to include those remaining classes of paper which on examination may be found to be competing with the products of the Indian Industry.

9. We shall be glad to furnish the Board with any information, facts or figures, which the Board may require and which may be in our power to supply.

(2) *Letter No. 3/33, dated the 20th June, 1931, from the Upper India Couper Paper Mills Co., Ltd.*

With reference to your letter No. 258, dated the 13th May, 1931, I have the honour to send you herewith three copies of our answers to the Questionnaire for Paper Enquiry sent by you. The other three copies will be sent to you early next week.

There are a few questions which have not been replied and a few statements which have to be sent yet. We shall try to send these at as early a date as possible. Copies of Balance Sheets are being sent under separate cover.

Enclosure.

Answers to the Questionnaire by the Upper India Couper Paper Mills Company, Limited, Lucknow.

1. (a) It is a Public Registered Company.
- (b) It is registered in India and the Capital is the Rupee one.
- (c) The proportion of Indian shareholders in the Company is 98 per cent. The proportion of shares held by Indian shareholders is 99 per cent.
- (d) All the Directors are Indians and also the superior management is wholly Indian.

In 1923-24 there were three Europeans in the superior staff and now there are none.

2. (a) Our Pulp making plant is of sufficient capacity to provide all the pulp necessary for our paper making machines.

(b) 13 tons per day of 24 hours.

3. Pulp is manufactured in wet condition only and the process is a part of the continuous series of operations for the manufacture of paper.

For these reasons it is not possible to give the figures for actual pulp output of our mills. Assuming, however, a loss of about 10 per cent. of unbleached pulp in the subsequent processes for paper making the estimated pulp outputs are given below:—

(a) Pulp—			(b) Paper—		
Year.	Pulp.		Year.	Paper.	
	Tons.			Tons.	
1924 . .	1,862		1924 . .	1,693	
1925 . .	2,716		1925 . .	2,469	
1926 . .	2,808		1926 . .	2,568	
1927 . .	2,766		1927 . .	2,664	
1928 . .	2,894		1928 . .	2,786	
1929 . .	2,579		1929 . .	2,596	
1930 . .	2,527		1930 . .	2,600	

4. Chief classes of paper manufactured in our mills are given below:—

Chief classes of paper.	Average percentage.
	Per cent.
White Printings	9.51
White Writings	18.39
Superior Badami and Unbleached	24.85
Ordinary Badami and Browns	44.97
Blottings	1.02
Coloured	0.09
Miscellaneous	1.14

5. Please see statement A.

6. The quantity of each of the primary materials required to make (a) one ton of Unbleached pulp and (b) one ton of paper is given below:—

(a) Pulp—		(b) Paper—	
	For 1 ton.		For 1 ton.
	Cwts.		Cwts.
Grass . .	45	Grass . .	50
Rags . .	30	Rags . .	33
Hemp . .	36	Hemp . .	40
Jute . .	30	Jute . .	33

7. Regarding the availability of our primary materials, we have got no apprehension. The outstanding fact is that we are getting as much as we want with offers for more and at falling prices. As Bamboo develop in the Southern Provinces, more of our own raw materials, for the use of which we are better situated, will be set free thus improving our position still further in this respect. As to the suitability of the raw materials for the manufacture of paper, we have also no doubts either; papers manufactured out of these raw materials have been sold for close on half a century, quality of the papers has recently been improved, and on the completion of our scheme of improvement will be further improved so as to satisfy the most exacting demands of the market.

8-9. We are not in a position to give these details as our raw materials are supplied by the contractors f.o.r. Mill Siding.

10. The freight on coal is a heavy item of expenditure. The freight works out in our case to about double the price of coal at the pit head and any relief would certainly be helpful.

11. The Bamboo being very far away from the site of our mills, we did not propose manufacturing pulp from Bamboo and hence did not undertake any experiments.

12. Please see statement B.

13. Reasons for the use of Wood pulp are:—

(a) To bring down the rates of some of the raw materials, specially that of Sabai grass. Only small proportions of Wood pulp were used, but the fact of its use demonstrated to the intending suppliers that the Company was not absolutely dependent on certain classes of raw materials for making better qualities of paper.

(b) On the demand of certain customers, *e.g.*, the Government of India who sometimes specify the inclusion of certain percentage of Sulphite wood pulp in some of their papers, wood pulp has to be used.

(c) The wood pulp provides a convenient reserve of manufactured pulp of good quality against the contingency of any unusual pressure on, or break down of, the pulping plant.

14. We do not require any imported wood pulp at all under ordinary circumstances. For reasons detailed above, 5-10 per cent. of our total pulp requirements would be sufficient.

15. The price of wood pulp has fallen considerably since the last Tariff Board Enquiry. We should think that part of this fall in price must be due to lower cost of production. There are, however, quite clear indications that overproduction prevails which in the words of a big Swedish firm of pulp dealers "must take an expression in a period of disastrous depression", and thus causing drop in prices. It is also stated that many pulp mills are existing in Finland as well as in Sweden, "in Sweden for a long time—only as parasites on the other production branches".

In our opinion, the wood pulp prices have very likely reached the lowest levels and during the next few years the tendency will be for the prices to go up though we believe the recovery will be rather slow.

16. (a) Since 1923-24, works costs have been considerably reduced. Compared with the figures of 1923, there has been a reduction of about Rs. 200 per ton.

(b) Quality especially of the whites has been much improved. Due to the adoption of Fractional Digestion and of improved processes of bleaching, it has now been possible to obtain much whiter pulp than we could get before. Also the introduction of several devices for the purification of the pulp has resulted in the elimination of a large proportion of impurities which used to cause a large number of specks in our papers. As soon however, as our new Power Plant will be in operation and we shall have sufficient power, we intend to instal machinery like Screening plants, Centrifuges, etc., to clean the pulp more thoroughly.

(c) As compared with the position in 1923-24, there has also been an increase in output by about 1,000 tons per annum. We expect to increase the output considerably as soon as our scheme of Electrification has been completed.

17. Please see statements.

18. Yes: China Clay and Alum are now obtained by us from Indian sources. We get all our supplies of these two auxiliary materials from India whereas in 1924 and before we used to import them.

19. Please see statement on Form III annexed to follow.

20. (a) We do not collect our own raw materials but purchase from Contractors.

(b) Please see statement D.

21. Please see statement E.

22. In 1923-24, we had three European Supervisors. At present we are working wholly with Indian labour. The three posts occupied by the three European Supervisors referred to above are now filled by Indian apprentices trained in this mill. Indian workmen are encouraged to be trained in skilled work and then they assume the positions of Jamadars or Mistries in immediate charge of workmen. On account of the lack of education of workmen it is not possible to entrust them, except in rare cases, with positions of higher responsibility. We, however, take trained students of the Mechanical Class of the Local Technical School as also educated young men as paid and unpaid apprentices and they are allowed to start as workmen and gradually work their way up to positions of responsibility.

23. The arrangements for housing have been made for Supervising Staff only. For the rest of the labour no arrangements are in fact necessary, because practically all of this labour is drawn from villages within walking distances from the mill. We consider this state of affairs to be satisfactory as the workmen themselves live under their own home conditions and amongst their familiar surroundings. No labour colony with the most efficient welfare organisation can, in our opinion, be a substitute for this.

For the above reasons no special welfare work has been undertaken by us. We, however, give the workmen a casual leave of 10 days on full pay during the year and this leave often comes handy to the workmen during the cropping seasons, most of the workmen being themselves agriculturists. Inconvenience undoubtedly is felt by the mill management due to increased absenteeism during these periods, but, as far as practicable, the situation is sympathetically handled often by recruiting temporary labour.

24. We have purchased a modern Steam and Power Plant and at present are erecting this machinery into a Central Power Station to provide electricity to drive our present machinery and those which we propose to obtain for our future extension. We anticipate a reduction in the cost of power as well as in the consumption per unit of paper. Accurate figures are only possible after we have put the plant in operation.

25. Total Indian production:—

(1) About 40,000 tons.

(2) (a) The total Indian demand of all classes of paper is 160,000 tons.

(b) Much of the above excluding Newsprint, old Newspapers and some of the special papers like high class writings, tissues, etc., are actually being, or are likely to be, manufactured in this country. We estimate the quantity to be about 80,000 to 100,000 tons annually.

26. In our opinion, the conclusions arrived at by the Tariff Board in their last enquiry as to the possibilities of creating an export trade in Indian made pulp (Bamboo) as well as developing a market in the country still hold good. There is no doubt that shortage of wood for pulping eventually will lead to increase in price of foreign wood pulp so much so that ultimately Bamboo pulp may have its chance for developing an export trade. But the difficulty of forecasting a date as to when this will happen is further complicated by the worldwide depression in trade. The immediate prospects of Bamboo pulp are in the Indian market and that, in connection with the existing Paper Industry, which not only provides a ready market but is in the most favourable position to do the pioneering work. The next stage of development may well be the establishment of a Bamboo pulp mill, say at Cuttack, in which some of the Paper Mills may participate to their advantage.

27. We cannot think of any at the present stage of development of the Bamboo pulp industry. Directly, of course, we would appear to gain from a protective duty on imported pulp as practically the whole of our raw materials are drawn from Indian sources. But until the Bamboo Pulp Industry be sufficiently developed, protective duty on imported pulp will upset the present balance of pulp requirements of the Paper Industry of this country and will thus react unfavourably on the prices of existing raw materials during the intervening transitional period and handicap the existing Paper Industry as a whole due to increased cost of production of their papers and this in turn calling for much higher duties on the latter and proving a rather heavy burden on the consumer. We have no doubts in our mind that the best way to promote the Bamboo Pulp Industry and the Paper Industry generally is to foster the existing Paper Industry during the transitional period provided the units composing the industry agree to re-organise themselves to meet the modern conditions. This is being done. Therefore, in our opinion, the seemingly paradoxical position of not imposing a protective duty on the imported pulp in order to foster the growth of the Pulp Industry in this country is a correct one under the present circumstances.

29. Please see statement F.

35. Sometimes Bamboo paper sells at a somewhat lower rate than the grass paper on the ground of the former paper possessing less bulk. An additional reason in our opinion is that as the Bamboo paper came into the market only recently as compared with the grass paper, it has still to establish itself firmly in the market, and for this reason a certain amount of concession in price is allowed to the customers.

36. There has been a decided improvement in the white group of papers in our mills since the protection was granted. The improvement consists in the production of whiter and cleaner paper of better finish. This has been possible by the adoption of more rigorous sorting and cleaning arrangements of the raw materials at the preliminary stages, of improved processes of digestion and of bleaching and by the introduction of a series of devices for freeing the prepared pulp from as much of the impurities as are practicable under the existing circumstances. We should like to note here that after a few months when more power will be available in the mills on the completion of the scheme of electrification, machinery calculated to free the pulp more thoroughly from the foreign impurities will be installed.

37. We have not got many concrete instances to offer but sometimes we did receive cheap samples of white paper which on examination showed much less than 65 per cent. of mechanical wood pulp in them. As the failure of tests either way may prejudicially affect the importers and manufacturers respectively, we would make the following suggestions:—

The proportion of mechanical wood pulp contents in the paper should be defined in terms of the results of sampling and tests carried out according to model specifications drawn up after careful investigations and in collaboration with experts in Europe, if such collaboration be considered necessary. The chief point is to assure that the tests yield fairly consistent results. It will then be the lookout of the manufacturers of this class of paper to ensure that their makes satisfy these tests. This will, in our opinion, be practically a much easier proposition than if they attempted to prove from their furnish the actual proportion of the mechanical wood pulp in the paper. The results at this end would be that causes of dispute would be considerably less and the Customs Control would be surer. The certificate accompanying a consignment of Newsprint can state that the paper satisfies the Government of India Standard tests for Mechanical Wood Pulp and as the same tests will be applied in the Customs Laboratories of this country, there will be less possibility of divergence of test results.

38. We have adopted Raitt's process of Fractional Digestion for boiling grasses. We have been able to save Chemicals and obtained much whiter pulp than was possible previously.

Minor additions and replacements:—

(a) Replacements—

- (i) a new Boiler.
- (ii) a Steam Driven Pumping Set.

(b) Additions—

- (i) A Steam Driven Electric Set for lighting.
- (ii) A bigger sized Guillotine Paper Cutter.
- (iii) A Refiner.
- (iv) A Pulping Machine.
- (v) Construction of an improved type of Beating Engine.

All of these have proved successful and are found of advantage in the satisfactory working of the mills.

In addition to these, a very important replacement work in the shape of a modern Steam and Power Plant and also electrification of the mill drives, etc., is being carried out at the present moment. This we hope to complete by the end of this year.

39. (a) Pulp.—A fee of Rs. 6,000 for license for Fractional Digestion.

(b) Paper Rs. 24,442.

For both (a) and (b) combined Rs. 7,610 for minor items.

In addition to these we have already spent a sum of Rs. 4,07,386 on the new Power and Steam Plants and also for Electrical Equipment for the new electrification scheme which is being carried out now and is to serve both the pulp and paper departments.

40. We are actually carrying out a scheme of electrification of our mills necessitating the replacement of our existing power and steam plant (please see above).

We have also decided to carry out a scheme of extension including the erection of a modern Paper Making machine with all the auxiliary plants, the preparation plants and the Chemical plants.

41. Please see the statement G.

42. A bigger and faster running modern machine would have a capacity of producing as much paper as is being obtained from our two existing machines. Basing on this, we estimate, the cost of a single machine mill with an equivalent capacity at the present day would be for—

	Rs.
(a) Buildings	8,00,000
(b) Plant and machinery	15,00,000

43. Please see statement H.

44. Please see statement I.

45. Copies of Balance Sheets sent under separate cover.

46. No.

47. Please see statement of Works Costs annexed.

48. The works costs of unbleached grass pulp given below is an approximate estimate only. Accuracy is practically impossible as the pulp is not manufactured separately.

	Primary materials.	Auxiliary materials.	Labour.	Power.	Establishment.	Miscellaneous.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Grass	91.8	85.08	15.33	19.25	6.19	3.46	221.11

Labour.—Actual labour employed on pulp-making plant has been taken and to that has been added $\frac{1}{3}$ rd of the general labour expenses, e.g., Engineering Department, Watch and Ward, etc.

Miscellaneous.— $\frac{1}{3}$ rd of all the other miscellaneous general charges has been taken.

Coal.—As we cannot estimate separate power costs under our present circumstances, we have taken the figures for coal only. One-third of the total expenses under this head has been taken.

Establishment.—Similarly in this case also one-third of the total costs has been taken excluding those for Head Office.

49. Reply will be sent in a few days.

50. (1) The average value of the stocks of coal, materials and finish goods is Rs. 7,40,009.

(2) The average outstanding in respect of goods sold by the Company (in years 1924-30) is approximately Rs. 2,50,000.

51. Please see the statement 'K'.

52. We are decidedly of the opinion that there is an overwhelming case for the continuance of protection. The Bamboo Pulp Industry has made a definite progress since the protection was first granted. The Titaghur Paper Mills are manufacturing Bamboo Pulp by the Soda Process to the tune of two to three thousand tons of pulp annually. They have finalised arrangements for extending their Bamboo Pulp Plant so as to increase their output by more than double. A Commercial Concern like theirs could not think of doing this unless they were sure of their initial success.

The Andhra Paper Mills at Rajahmundry also started operations some-time ago, and we believe that if they reconstitute themselves into an economic manufacturing unit, there is no reason why a prosperous Bamboo Pulp and Paper Industry by the Soda Process should not be established there supplying to the markets of the South. In our opinion, this is sufficient progress for the start. Commercial concerns have to be extremely cautious in new ventures and progress must be slow. This, in our opinion, is more a safeguard than otherwise to the success of the Bamboo Pulp Industry. Then there is the possibility of a pulp mill being started at Cuttack. Several of the Paper Mills may combine for the purpose for obtaining their bamboo pulp from this source. We ourselves are interested in this project in view of our scheme for extension. The freight on bamboo itself may be prohibitive in our case for use in our mills for pulp making but the freight on the pulp itself would be considerably lower and in fact need not be much more than freight on paper. Thus we need not be much at a disadvantage compared with the down country mills so far as the use of bamboo pulp for making papers meant for the up-country markets is concerned.

Regarding Sabai grass, we maintain that our position is about equally favourable as that of the Punjab Paper Mills for which the Tariff Board made an exception in their last enquiry. If grass is nearer to them, coal is nearer to us. In addition to this, we are more centrally situated in respect of the big markets.

Though the Tariff Board in their last enquiry have ignored the claims of other raw materials we use, namely, the rags and hemp, we respectfully submit that they deserve consideration. They may not be natural products in the strict sense of the term. They are waste products, but so far as their industrial use is concerned, there is no reason, in our opinion, why they should not be in the same category as the natural products. As to the question of abundance of supply, this, we submit, is a relative term. The chief point is whether an industry of adequate size can be established on the available raw materials. There is no doubt of the value of rag stock as a paper making material. Along with the increase in education, the demand for writing papers is bound to grow. Rags, hemp and Sabai grass provide excellent raw materials for the manufacture of these papers.

We are at present engaged in carrying out a scheme of re-organisation and extension which when completed will put us in a strong position. We maintain that we deserve State aid for this period of transition, more so, as we are potential users of bamboo pulp, the development of which is the professed object of the Bamboo Paper Industry Act. There is very little doubt that if the protection be withdrawn at this stage, not only the development of Bamboo Pulp Industry will receive a serious setback, from which it may not recover for a long time to come, but the whole Paper Industry in India will be in jeopardy. This is a well established industry and of national importance and taken as a whole in full of promise. A continuance of the protection for a further period would enable it to tide over the difficulties during the period in which it is engaged in setting its house in order to meet the modern conditions.

53. The protection should be continued in the same form and at the same rate as before.

All the writing papers and all the printing papers excepting Newsprint containing 70 per cent. or more of mechanical wood pulp in the fibre contents and special papers like Chrome, marble, flint, etc., which are not manufactured in this country, should be subjected to the protective duty. Writing and printing papers are the principal lines which the Indian Mills extensively make and so it is necessary to continue protecting these papers in case it be established that State aid should be continued.

Amongst the packing and wrapping paper group, Manilla and envelope papers should be subjected to protective duty. Manilla paper is manufactured in this country and the imported paper competes with the Badami paper of Indian make. Envelope papers embrace a wide range of papers and cannot properly be described as packing paper. If unprotected, such papers as Cream Laid can easily be imported in large quantities labelled as Envelope paper free of protective duty and will thus compete with similar Indian made papers.



STATEMENT A.

(Question No. 5.)

Annual consumption since 1924 of each of the primary materials for the manufacture of paper.

No.	PARTICULARS.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
		T. C.	T. C.	T. C.	T. C.	T. C.	T. C.	T. C.
1	Rags	785 5	1,136 13	1,434 15	1,271 16	1,503 7	1,741 13	1,585 9
2	Patmal	820 4	1,386 19	1,270 16	939 8	1,264 10	1,216 9	1,050 13
3	Hemp Rope	443 2	963 5	644 18	839 3	661 12	540 1	799 1
4	Bab Grass	1,068 8	1,010 16	1,503 9	1,331 16	1,706 16	1,268 3	1,064 4
5	Waste-paper	90 8	108 4	104 19	92 11	98 16	97 14	62 0
6	Moonj . . . . .	...	8 6	...	...	1 16	...	...
7	Woodpulp . . . . .	...	...	17 19	165 10	172 5	279 8	336 4

STATEMENT II.
(Question No. 12.)
Statement of each kind of foreign pulp imported by us during each year, etc., etc.

Class of Pulp.	Quantity.		Country of Export.	Price c. i. f. Calcutta, per ton.		Port of importation.	Freight, Insurance, etc.	Landing charges per ton.	Transshipment charges per ton.
1926.	T.	C. Q.		£	s. d.			Rs. a. p.	Rs. a. p.
Bleached Sulphite	4	16 3	Norway or Sweden.	19	10 0	Calcutta .	...	7 3 2	36 5 0
Strong Sulphite	4	17 3	Do. .	15	15 0	Do. .	...	6 13 7	36 5 0
Easy Bleaching Sulphite	9	1 2	Do. .	16	2 0	Do. .	...	7 9 4	35 1 2
1927.									
Bleached Sulphite	248	8 3	Do. .	17 to 18	5 0	Do. .	...	5 0 3	37 0 10
1928.									
Bleached Sulphite	74	16 1	Do. .	16 to 17	10 0	Do. .	...	5 0 0	37 14 0
Easy Bleaching Sulphite	50	0 0	Do. .	13 to 13	10 0	Do. .	...	4 13 1	37 13 11
1929.									
Easy Bleaching Sulphite	318	11 2	Do. .	12 to 14	15 6	Do. .	...	4 10 3	21 13 3
Mechanical	10	0 0	Do. .	8	15 0	Do. .	...	6 12 3	56 2 6
1930.									
Bleached Sulphite	150	0 0	Do. .	15 to 16	10 0	Do. .	...	4 13 0	21 12 3
Easy Bleaching Sulphite	237	0 0	Do. .	11 to 14	10 0	Do. .	...	5 2 11	20 6 2
Mechanical	10	0 0	Do. .	11	10 0	Do. .	...	6 7 2	34 14 8

N.B.—Freight, Insurance, etc., not known to us as we purchase C. I. F. Calcutta.

STATEMENTS D & E.

[Questions Nos. 20 (b) & 21 (b).]

Statement showing the Average Daily Attendance and the Account of Wages paid yearly for Labour employed in the Mills from 1924 to 1930.

Particulars.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
Average daily attendance for Mill work	542	704	762	737	770	753	736
Average daily attendance for work in new Power Plant . . . .	...	...	...	...	...	...	15
TOTAL	542	704	762	737	770	753	771
Wages paid for Mill work	Rs. A. P. 1,22,520 15 3	Rs. A. P. 1,29,637 7 3	Rs. A. P. 1,29,059 8 6	Rs. A. P. 1,33,551 8 9	Rs. A. P. 1,37,847 13 0	Rs. A. P. 1,39,778 0 9	Rs. A. P. 1,32,833 0 3
" " new Power Plant work . . . .	...	...	...	...	...	...	2,520 0 0
TOTAL	1,22,520 15 3	1,29,637 7 3	1,29,059 8 6	1,33,551 8 9	1,37,847 13 0	1,39,778 0 9	1,35,353 0 3

STATEMENT F.

Statement showing the rate of freight on paper per md. per mile from Badshahnagar, Howrah, and Bombay to the following stations.

FROM BADSHAHNAGAR.			FROM HOWRAH.		FROM BOMBAY.	
Station to.	Less than 300 Mds.	Over 300 Mds.	Less than 300 Mds.	Over 300 Mds.	Less than 300 Mds.	Over 300 Mds.
	Per md. P. M.	Per md. P. M.	Per md. P. M.	Per md. P. M.	Per md. P. M.	Per md. P. M.
Howrah	25	17	...	...	...	...
Allahabad	51	37	44	44	31	26
Delhi	45	26	34	21	31	2
Benares	48	31	44	44	31	31
Agra	47	3	34	21	34	34
Meerut	46	27	35	21	43	43
Rampur	48	32	43	43	43	43
Moradabad	47	3	55	55	43	43
Bareilly	49	35	43	43	42	42
Gaya	45	25	45	45	32	32
Aligarh	46	28	43	43	43	43
Hathras	47	29	43	43	43	43
Patna	46	25	44	44	31	33
Saharanpur	45	25	34	21	43	43
Bhagalpur	42	21	42	42	33	33
Naini Jn.	41	27	44	44	3	27

Statement showing the Old and New Rates of freight on paper from Badshahnagar to the following stations.

Name of article.	Stations.		Old rate of 300 mds. or over 300 mds.	New rate Less than 300 mds.	New rate over 300 mds.	Date of enforcement.
	From	To				
			Per md. Rs. A. P.	Per md. Rs. A. P.	Per md. Rs. A. P.	
Paper in Balcs.	Badshahnagar	Howrah	0 15 6	0 13 4	0 8 9	27th September 1928.
Do.	Do.	Allahabad	0 6 0	0 5 9	0 4 3	Ditto.
Do.	Do.	Delhi	0 12 5	0 11 11	0 6 10	Ditto.
Do.	Do.	Benares	0 8 2	0 7 11	0 5 2	Ditto.
Do.	Do.	Agra	0 8 3	0 8 5	0 5 5	Ditto.
Do.	Do.	Meerut City	0 11 7	0 11 4	0 6 7	Ditto.
Do.	Do.	Rampur	0 8 1	0 7 10	0 5 2	Ditto.
Do.	Do.	Moradabad	0 8 8	0 8 5	0 5 5	Ditto.
Do.	Do.	Bareilly	0 6 8	0 6 5	0 4 7	Ditto.
Do.	Do.	Gaya	0 12 11	0 12 9	0 7 1	Ditto.
Do.	Do.	Aligarh	0 9 11	0 9 8	0 5 11	Ditto.
Do.	Do.	Hathras	0 9 3	0 9 0	0 5 8	Ditto.
Do.	Do.	Patna	0 13 4	0 13 1	0 7 2	Ditto.
Do.	Do.	Saharanpur	0 12 10	0 12 7	0 7 0	Ditto.
Do.	Do.	Bhagalpur	1 1 1	1 0 10	0 8 5	Ditto.
Do.	Do.	Naini	0 5 11	0 4 10	0 3 3	Ditto.

Statement showing the rate of freight on paper from Howrah to the following stations.

Name of article.	Stations.		Less than 300 mds.	Over 300 mds.
	From	To		
			Per md. Rs. A. P.	Per md. Rs. A. P.
Paper in Bales or Bundles.	Howrah	Allahabad . . .	1 2 7	1 2 7
Do. .	Do.	Delhi . . .	1 9 8	1 0 1
Do. .	Do.	Benares . . .	0 15 8	0 15 8
Do. .	Do.	Agra . . .	1 9 8	1 0 1
Do. .	Do.	Meerut City . . .	1 10 2	1 0 0
Do. .	Do.	Rampore . . .	1 12 8	1 12 8
Do. .	Do.	Moradabad . . .	1 13 4	1 13 4
Do. .	Do.	Bareilly . . .	1 11 4	1 11 4
Do. .	Do.	Gaya . . .	0 10 11	0 10 11
Do. .	Do.	Aligarh . . .	1 13 6	1 13 6
Do. .	Do.	Hathras Jn. . .	1 12 10	1 12 10
Do. .	Do.	Patna City . . .	0 12 6	0 12 6
Do. .	Do.	Saharanpore . . .	1 10 10	1 0 4
Do. .	Do.	Bhagalpore . . .	0 9 11	0 9 11
Do. .	Do.	Naini Jn. . .	1 2 6	1 2 6

Statement showing the rate of freight on paper from Bombay to the following stations.

Name of article.	Stations.		Rate less than 300 mds.	Over 300 mds.
	From	To		
			Per md.	Per md.
			Rs. A. P.	Rs. A. P.
Paper in Bales or Bundles.	Bombay .	Allahabad	1 6 0	1 2 10
Do. .	Do. .	Delhi	1 9 0	0 15 10
Do. .	Do. .	Benares	1 8 6	1 8 6
Do. .	Do. .	Agra	1 14 0	1 14 0
Do. .	Do. .	Meerut	2 3 3	2 3 3
Do. .	Do. .	Rampore	2 4 1	2 4 1
Do. .	Do. .	Moradabad	2 3 6	2 3 6
Do. .	Do. .	Bareilly	2 4 1	2 4 1
Do. .	Do. .	Gaya	1 12 10	1 12 10
Do. .	Do. .	Aligarh	2 0 8	2 0 8
Do. .	Do. .	Hathras Jn.	2 0 3	2 0 3
Do. .	Do. .	Patna City	1 13 3	1 13 3
Do. .	Do. .	Saharanpore	2 7 8	2 7 8
Do. .	Do. .	Bhagalpore	2 1 9	2 1 9
Do. .	Do. .	Naini	1 5 0	1 2 10

STATEMENT G.

(Question No. 41.)

Statement showing the block value of property as it stood on 31st December 1930.

Particulars.	Amount.
	Rs. A. P.
1. Land at Cost	1,000 0 0
2. Building	1,35,479 5 4
3. Machinery	1,34,368 3 0
4. Other Assets	31,86,216 11 0
	<hr/> 34,57,064 3 4

STATEMENT H.

(Question No. 43.)

Statement showing the depreciation written off and Reserve Fund created either from surplus profits or from other sources.

No.	Particulars.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	Total.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
1	Depreciation written-off— Total	7,000 0 0	...	47,476 11 8	56,263 6 7	43,728 12 4	96,894 15 6	25,674 1 7	45,766 5 0	...
2	Reserve Fund created from Surplus profit . . . . .	...	...	...	...	...	4,432 12 5	30,000 0 0	15,000 0 0	...
3	Reserve Fund created from other sources	1,50,000 0 0	1,10,000 0 0	...	...	...	...	...	...	...

STATEMENT I.

(Question No. 44.)

Statement showing the paid-up Capital, amount and rate of dividend paid.

No.	Particulars.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1	Capital paid up	8,00,000	8,00,000	8,00,000	8,00,000	8,00,000	8,00,000	8,00,000	8,00,000
2	Dividend paid	2,40,000	...	48,000	48,000	64,000	80,000	64,000	56,000
3	Rate of dividend (average only)	@ 30%	...	@ 6%	@ 6%	@ 8%	@ 10%	@ 8%	@ 7%

FORM I.

Statement showing the expenditure on production of paper as required in the Question No 47.

No.	Particulars.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Primary Materials N.B.—Expenditure on each material shown separately as well as the quantity of each used as per statement attached.	2,25,721 8 0	3,38,122 7 0	3,46,462 7 0	3,52,037 10 0	3,66,476 2 0	3,24,755 2 0	3,06,266 1 0
2	Imported Pulp			5,198 10 0	46,406 14 0	45,536 5 0	60,172 10 0	74,639 14 0
3	Auxiliary Materials N.B.—Expenditure on each principal material shown separately as well as the quantity of each used as per statement attached.	2,31,907 14 0	3,24,575 14 0	2,99,181 10 0	3,01,044 15 0	2,90,161 9 0	2,88,760 2 0	2,90,889 5 0
4	Mill Labour	1,22,520 15 3	1,29,637 7 3	1,29,059 8 6	1,33,551 8 9	1,37,847 13 0	1,39,778 0 9	1,32,533 0 3
5	Power and Fuel	1,68,617 9 0	1,94,619 14 0	1,64,955 7 0	1,92,055 2 0	1,71,311 0 0	1,65,462 15 0	1,59,320 7 0
6	Current repair and maintenance	29,939 4 1	31,290 9 5	62,433 12 11	42,170 8 5	45,417 2 10	32,920 8 1	30,539 13 0
7	Supervision and Establishment.	55,214 8 2	50,640 14 1	55,844 4 5	56,929 1 5	50,438 13 1	52,737 0 4	53,661 5 8
8	Miscellaneous—Rent, Municipal Taxes, Insurance.	25,575 8 7	16,550 4 0	20,168 12 2	35,371 8 8	37,156 15 5	41,384 3 11	38,551 9 1
9	Other items	...	...	...	...	...	...	...
	TOTAL	8,59,557 3 1	10,85,437 5 9	10,83,304 8 0	11,62,557 4 3	11,44,335 12 4	11,05,970 10 1	10,86,701 7 0
	Total output for the year in tons.	1,694	2,469	2,568	2,665	27,786	2,596	2,600

Statement giving the quantity and amount of each of the Primary Materials and the Chief Auxiliary Materials in connection with the Form I.

No.	Particulars.	1924.		1925.		1926.		1927.	
		Quantity.	Amount.	Quantity.	Amount.	Quantity.	Amount.	Quantity.	Amount.
1	Primary Materials—								
	Rags and Cuttings .	785 5	60,186 13	1,136 18	77,989 1	1,434 15	98,669 10	1,271 16	85,543 3
	Patmal and Cuttings .	820 4	56,637 6	1,386 19	87,437 9	1,270 16	79,613 9	939 8	59,430 5
	Hemp Rope .	443 2	45,370 12	963 5	93,169 0	644 18	61,300 1	839 3	76,900 5
	Bair Grass .	1,063 8	59,709 0	1,040 16	74,114 6	1,503 9	1,03,610 8	1,831 16	1,27,245 1
	Waste paper .	90 8	3,817 9	168 4	6,122 5	104 19	3,238 11	92 11	2,878 12
	Monj .	..	..	8 0	190 2	..	..	..	..
	TOTAL	..	2,25,721 8	..	3,38,122 7	..	3,46,462 7	..	3,52,057 10
2	Imported Pulp .	..	..	..	..	17 19	5,198 10	165 10	46,406 14
3	Auxiliary Materials—								
	Bleaching Powder .	121 13	34,258 5	189 4	33,849 12	157 2	35,046 10	255 4	53,060 6
	Caustic Soda .	135 5	49,500 11	140 5	42,557 5	193 10	52,400 13	235 10	61,463 6
	Rosin .	44 8	13,657 13	77 0	23,183 8	47 3	15,569 4	54 7	19,696 2
	China Clay .	128 4	14,841 1	159 0	17,513 11	120 12	12,738 11	94 0	8,138 11
	Katni Clay and Ochre	56 15	1,417 14	49 8	1,362 11	98 16	2,040 15	55 1	1,162 2
	Alum .	251 12	35,215 10	399 7	50,318 7	345 12	41,039 0	383 10	44,050 3
	Lime .	457 10	12,845 2	724 6	26,206 0	652 10	16,862 1	591 7	14,335 12
	Soda Ash .	9 12	2,025 5	11 14	2,128 14	17 17	3,148 7	10 15	1,796 0
	Dyes .	1 4	7,445 11	0 12	6,514 3	1 1	5,657 13	0 9	2,567 10
	Miscellaneous Stores	..	60,700 6	..	1,26,941 7	..	1,14,678 0	..	94,744 11
	TOTAL	..	2,31,907 14	..	3,24,575 14	..	2,99,181 10	..	3,01,014 15
5	Power and Fuel—								
	Steam Coal .	12,362 3	1,68,617 9	15,292 1	1,94,619 14	14,402	1,64,955 7	16,738 15	1,92,055 2

Statement giving the quantity and amount of each of the Primary Materials and the Chief Auxiliary Materials in connection with the Form I—Contd.

No.	Particulars.	1928.			1929.			1930.		
		Quantity.	Amount.	T. C.	Quantity.	Amount.	T. C.	Quantity.	Amount.	T. C.
1	Primary Materials—									
	Rags and Cuttings .	1,503 7	1,02,071 8		1,741 13	1,16,977 6		1,585 9	1,05,913 14	
	Patnal and Cuttings .	1,264 10	81,915 10		1,216 9	71,248 13		1,050 13	60,574 4	
	Hemp Rope .	661 12	61,106 11		540 1	46,401 15		799 1	68,215 7	
	Balb Grass .	1,706 16	1,17,811 9		1,268 3	85,591 3		1,064 4	68,634 12	
	Waste-paper .	98 16	3,451 14		97 14	4,535 13		62 0	2,927 12	
	Monj .	1 16	118 14		..	..		..	..
	TOTAL	..	3,66,476 2	..	..	3,24,755 2	..	..	3,06,266 1	..
2	Imported Pulp .	172 5	45,526 5		279 8	60,172 10		336 4	74,639 14	
3	Auxiliary Materials—									
	Bleaching Powder .	206 15	37,773 11		273 1	43,160 1		335 10	51,428 13	
	Caustic Soda .	190 5	49,337 14		153 15	39,524 1		164 15	44,459 9	
	Rosin .	59 7	21,519 8		60 14	17,812 14		55 9	19,189 5	
	China Clay .	84 15	6,299 7		100 0	5,857 12		45 0	2,632 5	
	Karni Clay and Ochre .	73 13	1,680 0		79 10	1,896 0		60 12	1,373 11	
	Alum .	393 7	42,660 11		468 2	49,896 15		468 6	47,946 12	
	Lime .	633 13	13,754 15		546 2	12,404 11		526 15	11,731 10	
	Soda Ash .	14 6	2,333 4		32 11	5,250 14		26 19	4,268 3	
	Dyes .	0 13	3,602 6		0 11	1,784 14		0 12	1,633 9	
	Miscellaneous Stores .	..	1,11,199 13		..	1,11,172 0		..	1,06,225 8	
	TOTAL	..	2,90,161 9	..	..	2,88,760 2	..	..	2,90,889 5	..
	Power and Fuel—									
	Steam Coal .	15,346 17	1,71,311 0		15,284 6	1,65,462 15		15,381 5	1,59,320 7	

FORM II.

Statement showing the works costs per ton of finished paper as required by the Question No. 47.

No.	Particulars.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
1	Primary Materials <i>N.B.</i> —Expenditure on each material shown separately as well as the quantity of each used (as per statement which follows).	Rs. 133.24	Rs. 136.94	Rs. 134.91	Rs. 132.1	Rs. 131.54	Rs. 125.09	Rs. 117.79
2	Imported Pulp . . . .	..	..	2.02	17.41	16.34	23.18	28.7
3	Auxiliary Materials <i>N.B.</i> —Expenditure on each principal material shown separately as well as the quantity of each used (as per statement attached)	136.89	131.46	116.5	112.95	104.15	111.23	111.88
4	Mill labour	72.32	52.5	50.25	50.11	49.47	53.34	51.38
5	Power and Fuel	99.53	78.82	64.23	72.06	61.49	63.73	61.27
6	Current repairs and Maintenance	17.7	67.35	24.31	15.82	16.3	12.68	11.74
7	Supervision and Establishment	32.59	20.51	21.75	21.36	18.1	20.31	20.64
8	Miscellaneous—Rent, Municipal taxes, Insurance	15.09	6.7	7.85	14.39	13.33	15.94	14.44
9	Other items . . . .	..	..	..	..	..	..	..
	TOTAL	507.36	494.28	421.82	436.20	410.72	426.0	417.54
	Total output of paper for the year in tons .	1,694	2,469	2,568	2,665	2,786	2,596	2,600

Supplementary Statement showing the cost per ton of each material.

Particulars.	1924.		1925.		1926.		1927.		1928.		1929.		1930.	
	Quan- tity.	Amount.	Quan- tity.	Amount.	Quan- tity.	Amount.	Quan- tity.	Amount.	Quan- tity.	Amount.	Quan- tity.	Amount.	Quan- tity.	Amount.
1. Primary Materials—														
Rags and Cuttings	.46	35.52	.46	31.22	.55	38.42	.47	32.09	.53	36.63	.67	45.06	.60	40.73
Paternal and Cuttings	.48	33.43	.56	35.42	.49	31.00	.55	22.30	.45	29.40	.46	27.44	.40	23.23
Hemp Rope	.26	36.78	.39	37.73	.25	23.87	.31	22.30	.23	21.93	.20	17.87	.30	26.23
Bath grass	.63	35.24	.47	30.01	.58	40.34	.68	47.74	.61	42.28	.48	32.96	.40	26.59
Waste paper	.05	2.25	.16	2.47	.04	1.37	.03	1.08	.03	1.23	.03	1.74	.02	1.12
Monj	...	...	...	.07	...	...	...	...	...	.04	...	...	...	...
2. Imported Pulp	...	...	...	...	...	2.92	.06	17.41	.06	16.34	.10	23.17	.12	28.70
3. Auxiliary Materials—														
Bleaching Powder	.07	20.22	.05	13.71	.06	13.64	.09	19.90	.07	13.55	.10	16.62	.12	19.77
Caustic Soda	.07	29.22	.05	17.23	.07	20.40	.08	23.05	.06	17.70	.05	15.22	.06	17.01
Rosin	.02	8.06	.03	9.39	.01	6.06	.02	7.39	.02	7.72	.02	6.86	.02	7.37
China Clay	.07	8.78	.06	7.03	.04	4.96	.03	3.05	.03	2.26	.03	2.25	.01	1.01
Katni Clay and Ochre	.08	.83	.01	.55	.08	.73	.02	.43	.02	.60	.03	.73	.02	.52
Alum	.14	20.78	.16	20.37	.13	15.95	.14	16.52	.14	15.29	.18	19.22	.18	18.44
Lime	.27	7.58	.29	8.18	.25	6.56	.22	5.37	.22	4.93	.21	4.77	.20	4.51
Soda	...	1.19	...	.86	...	1.23	...	.67	...	.83	.01	.68	...	.62
Dyes	...	4.39	...	2.63	...	2.90	...	.96	...	1.29	...	.42	...	.40
Miscellaneous Stores	...	35.83	...	51.41	...	44.65	...	35.56	...	39.91	...	63.73	...	40.85
Power and Fuel—														
Steam Coal	7.29	99.53	6.19	78.82	5.60	64.23	6.38	72.06	5.50	61.48	5.88	63.73	5.91	61.27

STATEMENT K.

(Question No. 51.)

Statement showing the annual amount of the Head Office expenses including the Directors' fees.

No.	Particulars	1924.	1925.	1926.	1927.	1928.	1929.	1930.
1	Head Office expenses including the Directors' fees	39,722 6 1	34,981 15 10	43,588 6 6	33,067 8 6	40,009 4 11	38,504 7 8	36,750 14 5

(3) *Letter No. 222, dated the 10th July, 1931, from the Upper India Couper Paper Mills Company, Limited, Lucknow.*

We are sending you six copies of Form III duly filled up. We are also sending six copies of the reply to question No. 3, the figures of which have been revised.

As to the output of paper in question No. 3 (b) the first set of figures is for those for finished output of saleable papers whereas in the second column are given figures for the totals output including wrappers made for internal use.

Regarding Form II, question No. 47, the Works Costs given in these refers to those calculated on the finished output only excluding the wrappers made for internal use. We are sending another six copies of this Form II in which the Works Costs per ton have been calculated on the basis of the total output including wrappers made for internal use.

Six copies of the reply to question No. 49 are also sent as also six copies of Form I (revised) showing in addition our total output including wrappers.

Six copies of the reply to question No. 6 are also sent, the figures of which have been revised and six copies of sample book containing a few papers of our manufacture are also enclosed.

We apologise for the delay in sending these particulars.



FORM I.

Statement showing the Expenditure on Production of paper as required in the Question No. 47.

No.	Particulars.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1	Primary materials.—N.B. —Expenditure on each material shown separately as well as the quantity of each used as per statement already sent.	2,25,721 8 0	3,98,122 7 0	3,46,462 7 0	3,52,057 10 0	3,66,476 2 0	3,24,755 2 0	3,06,266 1 0
2	Imported Pulp	.....	.....	5,198 10 0	46,406 14 0	45,526 5 0	60,172 10 0	74,689 14 0
3	Auxiliary materials.—N.B. —Expenditure on each principal material shown separately as well as the quantity of each used as per statement already sent.	2,31,907 14 0	3,24,575 14 0	2,99,181 10 0	3,01,014 15 0	2,90,161 9 0	2,88,760 2 0	2,90,889 5 0
4	Mill Labour	1,22,520 15 3	1,29,637 7 3	1,29,059 8 6	1,33,551 8 9	1,37,847 13 0	1,39,778 0 9	1,32,833 0 3
5	Power and Fuel	1,68,617 9 0	1,34,619 14 0	1,64,955 7 0	1,92,035 2 0	1,71,311 0 0	1,55,462 15 0	1,59,320 7 0
6	Current repairs and Maintenance.	29,999 4 1	31,290 9 5	62,483 12 11	42,170 8 5	45,417 2 10	32,920 8 1	30,539 13 0
7	Supervision and Establishment.	53,214 8 2	50,640 14 1	55,844 4 5	56,929 1 5	50,438 13 1	52,737 0 4	53,661 5 8
8	Miscellaneous—Rent, Municipal taxes, Insurance.	25,575 8 7	16,550 4 0	20,168 12 2	38,371 8 8	37,156 15 5	41,384 8 11	38,551 9 1
9	Other items	.....	.....	.....	.....	.....	.....	.....
	Total	8,59,557 3 1	10,65,487 5 9	10,88,304 8 0	11,62,557 4 3	11,44,335 12 4	11,05,970 10 1	10,86,701 7 0
Total output in tons		1,694	2,469	2,568	2,665	2,786	2,595	2,600
Total output including wrappers made for internal use.		1,701.47	2,535.2	2,639.7	1,680.51	2,869.19	2,859	2,705.8

FORM II.

Question No. 47.
Statement showing the Works Costs per ton of paper including wrappers made for internal use.

No	Particulars.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1	Primary materials— N.B.—Expenditure on each material shown separately as well as the quantity of each used (as per statement already sent).	132.69	133.38	131.23	132.35	127.73	113.59	113.18
2	Imported Pulp	...	...	1.97	17.44	15.87	21.04	27.58
3	Auxiliary materials— N.B.—Expenditure on each principal material shown separately as well as the quantity of each used (as per statement already sent).	136.25	128.04	113.32	113.16	101.14	101.00	107.50
4	Mill Labour	72.03	51.14	48.83	50.20	43.05	48.89	49.08
5	Power and Fuel	99.13	76.77	62.48	72.20	59.71	57.98	58.87
6	Current repairs and Maintenance.	17.63	12.34	23.65	15.85	15.83	11.51	11.28
7	Supervision and Establishment.	3.46	19.97	21.15	21.40	17.58	18.44	19.83
8	Miscellaneous—Rent, Municipal taxes, Insurance.	15.03	6.53	7.64	14.42	12.95	14.47	14.25
9	Other items	...	...	...	...	...	...	...
	TOTAL	535.22	428.17	410.32	437.02	398.86	386.92	401.57
	Total output of paper including wrappers made for internal use.	Tons. 1,701.47	Tons. 2,535.2	Tons. 2,639.7	Tons. 2,660.52	Tons. 2,869.19	Tons. 2,859	Tons. 2,705.6

FORM III.

—	1924.	1925.	1926.	1927.	1928.	1929.	1930.
Grass—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
(1) Quantity of material used.	1,068.4	1,040.8	1,508.45	1,831.8	1,706.8	1,268.15	1,064.2
(2) Quantity of finished paper which material represents.	407	396	572	697	650	463	405
Bamboo—							
(1) Quantity of material used.	Nil	Nil	Nil	Nil	Nil	Nil	Nil
(2) Quantity of finished paper which material represents.	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Other Local fibres—							
(1) Quantity of material used.	2,139.2	3,655.3	3,455.4	3,142.9	3,528.25	3,595.85	3,497.15
(2) Quantity of finished paper which material represents.	1,202	2,035	1,942	1,739	1,981	2,032	1,943
Total indigenous fibres—							
(1) Quantity of material used.	3,207.6	4,696.1	4,968.85	4,974.7	5,235.05	4,864	456,135
(2) Quantity of finished paper which material represents.	1,609	2,431	2,514	2,436	2,631	2,515	2,348

FORM III—*contd.*

	1924.	1925.	1926.	1927.	1928.	1929.	1930.
Imported Pulp—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
(1) Quantity of material used . . .	Nil	Nil	17.95	165.5	175.25	279.4	336.2
(2) Quantity of finished paper which material represents.	Nil	Nil	16	150	159	254	305
China Clay—							
(1) Quantity of material used . . .	128.2	159	120.6	94	84.75	109	45
(2) Quantity of finished paper which material represents.	64.1	79.5	60.3	47	42.37	50	22.5
Other Auxiliary materials—							
(1) Quantity of material used . . .	56.75	49.4	98.8	55.05	73.65	79.5	60.6
(2) Quantity of finished paper which material represents.	28.37	24.7	49.4	27.52	36.82	40	30.3
TOTAL—	184.95	208.4	237.35	314.55	333.05	453.9	441.8
(1) Quantity of material used . . .	92.47	104.2	125.7	224.52	238.19	344.00	357.8
(2) Quantity of finished paper which material represents.							

3. (b).

Year.	Paper. Finished output of saleable paper.	Year.	Paper. Output of paper in cluding wrappers made for internal use.
	Paper. Tons.		Paper. Tons.
1924 . . .	1,693	1924 . . .	1,701.47
1925 . . .	2,469	1925 . . .	2,535.20
1926 . . .	2,568	1926 . . .	2,639.70
1927 . . .	2,664	1927 . . .	2,660.52
1928 . . .	2,786	1928 . . .	2,869.19
1929 . . .	2,596	1929 . . .	2,859.00
1930 . . .	2,600	1930 . . .	2,705.80

6. The quantity of each of the primary materials required to make (a) one ton of unbleached pulp and (b) one ton of paper is given below :—

	Cwts. for 1 ton.
(a) <i>Pulp</i> —	
Grass	47½
Rags	31½
Hemp	37½
Jute	31½
(b) <i>Paper</i> —	
Grass	52½
Rags	34½
Hemp	42
Jute	34½

49. On the assumption that our extensions have been completed and our output has been doubled, we expect a further reduction in coal to the extent of 30 per cent., Labour and Establishment 25 per cent., Chemicals—Caustic Soda and Bleach 50 per cent.

Future estimated Works Costs per ton of finished paper.

	Rs.
1. Primary materials	117.79
2. Imported Pulp	28.70
3. Auxiliary materials	93.50
4. Mill Labour	38.31
5. Power and Fuel	42.89
6. Current repairs and Maintenance	11.74
7. Supervision and Establishment	15.48
8. Miscellaneous—Rent, Municipal taxes, Insurance, etc.	14.44
TOTAL	362.85

(4) Letter dated 18th July, 1931, from the Upper India Couper Paper Mills Company, Limited, Lucknow.

As desired in your favour No. 378/F.-18 of the 30th June last, we beg to submit herewith a statement showing the Printing and Writing Papers manufactured during the year 1924 to 1930.

2. We may add that only the protected classes of paper have been included in the enclosed statement.

Enclosure.

Statement showing the Printing and Writing Papers made during the years 1924 to 1930.

	1924.	1925.	1926.	1927.	1928.	1929.	1930.
Quantity.	Quan- tity.	Quan- tity.	Quan- tity.	Quan- tity.	Quan- tity.	Quan- tity.	Quan- tity.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Printing	498	881	696	1,095	1,100	1,250	1,178
Writing	1,074	1,464	1,472	1,340	1,365	1,148	1,248

(5) *Letter dated 20th August, 1931, from the Upper India Couper Paper Mills Company, Limited.*

We are enclosing the several statements as desired by you during the time of oral evidence tendered by us in Lucknow.

2. Regarding the difference in the coal consumptions per ton in the years 1926 and 1930, this is explained as follows:—

(a) Different kinds of coals were used in these two years.

(b) Qualities and quantities of papers manufactured were different.

3. The capacity of digestors due to Fractional system of boiling has neither increased nor decreased. Though about 20 per cent. less grass can be filled in the digesters by this method, the total time a charge remains in the digester including that taken for washing is also correspondingly less.

4. The last price we paid per ton for Easy Bleached Pulp purchased in the month of July, 1931, is £9-10 c.i.f. Calcutta.

5. The average freight paid by us per ton on paper sold in the market during 1930 is Rs. 19-7-2-4.

6. Further, in support of our contention that Sabai grass and the group of strong materials comprising, rags, hemp and jute deserve independent recognition by the Board on their own merits, we would like to place before the Board the following points for their consideration:—

One of the arguments put against these raw materials is that after such a long existence of the industry, if it cannot maintain its position, it is not likely ever to do so and therefore does not deserve consideration.

We have to point out that this industry had already maintained its position unaided for a fairly long time. These raw materials possess very valuable paper making qualities and the defects associated with them are of superficial nature and are certainly removable. By the adoption of improved methods and machinery the impurities occurring in these raw materials can be removed and clean white paper of good finish and possessing the characteristic and valuable qualities associated with these raw materials can be obtained. Much has already been done, the quality of paper turned out by the Indian Mills has undergone very considerable improvement since the time of last Tariff Enquiry. So far as we are concerned, more is going to be done in the immediate future. Very large demand for the Badami classes of paper existed in the past for writing and even for printing purposes and as these papers did not show up the impurities in the same way as the white papers would do, their presence did not matter so much as they do now. The taste of the consumers is gradually changing more and more for whiter and cleaner papers and as soon as the re-organisation work in our mill is completed we shall be able to meet the most exacting demands of the market.

Another charge against these raw materials is that they are not abundant. These raw materials may not be abundant when the whole Indian paper industry is in contemplation. On the other hand, they may be abundant—in fact they are—for the particular classes of paper for which these raw materials are best suited. In no country these or the corresponding raw materials are used for the whole or even the larger part of its paper industry; yet they are invariably considered to be more valuable from the Papermaker's point of view than the wood pulp for a variety of papers are cannot be dispensed with. From the evidence tendered before the Tariff Board during their last enquiry, it appears that total quantity of Sabai grass annually available within the radius of economic exploitation is about forty or fifty thousand tons. Great Britain consumes two to two and a half lacs of tons of Esparto grass annually. The available tonnage of Sabai grass in India does not at all compare unfavourably, proportionately speaking, if the total outputs and consumptions of paper of the two countries are taken into consideration. When the anticipated but long-deferred shortage of pulping wood sets in at last, the available tonnage of Sabai grass for economic use will naturally further increase.

Development no doubt implies expansion of the industry; but when an industry is engaged in carrying out radical improvements which will enable it to make better use of its raw materials yielding superior classes of paper, readily marketable because more in accordance with the altering tastes of the consumers, the industry, so far as it is represented by these raw materials, is, we submit, still developing, and during the time of transitional difficulties, is as much deserving of State aid as any nascent industry in its pioneering stages, because ultimately in both cases the same purpose will have been served, namely the establishment of successful and profitable industries on firm bases.

As to the question whether rags, old hemp and old jute can be considered as natural products, we already stated in our written evidence that so far as their use in paper making is concerned, they satisfy all the conditions which natural products would do. The former are man's waste whereas bamboo, grass, etc., are nature's waste. We would like to point out that a too rigid interpretation of the proviso of natural advantage may lead one to the conclusion that such industries are those based on coaltar which is a factory waste and could never be considered deserving of protection.

With the rapid extension of primary education, the demand for writing papers is sure to grow enormously. Sabai grass and the strong materials lend such properties to paper as make it admirably suitable for writing purposes. The existence and development of the industry using these raw materials are thus a necessity. In Great Britain there does actually exist an important section of paper industry using Rags, Esparto and chemical wood pulp, *e.g.*, The Croxley Paper Mills of Messrs. John Dickinson & Co., Ltd. The corresponding development in this country naturally should take the form of one using Rags, Sabai grass and Bamboo Pulp.

We admit the cogency of the argument that so far as benefits obtainable from the protection in the present form granted to Bamboo under the present Act are concerned, these raw materials are in the same position as Bamboo. We would, however, like to stress another aspect of this matter for your consideration. If these raw materials be held as having no future in the Indian Paper Industry by such an authoritative body as the Tariff Board, and if this view be endorsed by the Government, the position of an Industry based on these raw materials certainly weakens considerably in some important respects. For example, it might be found difficult to finance important schemes of development in connection with this industry. We therefore earnestly request the Board to recognise the claims of these raw materials and treat the whole question of Paper Industry in India in a comprehensive manner. The Act in our opinion should be styled "Paper Industry (Protection) Act" instead of "Bamboo Paper Industry (Protection) Act".

Enclosure No. 1.

Statement of cost of Auxiliary Materials per ton delivered Mills since 1924.

Particulars.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
	Rate per ton delivered mills.	Rate per ton delivered mills.	Rate per ton delivered mills.	Rate per ton delivered mills.	Rate per ton delivered mills.	Rate per ton delivered mills.	Rate per ton delivered mills.
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.
AUXILIARY MATERIALS.							
Bleaching Powder	251 2	242 5	219 10	204 4	175 0	152 12	154 15
Caustic Soda	359 3	281 14	243 3	259 15	259 8	255 1	274 2
China Clay	111 7	112 0	97 4	79 7	63 1	57 1	58 8
Resin	302 11	300 9	339 10	369 1	360 13	347 1	344 10
Katni Clay and Ochres	32 2	15 8	21 13	21 8	16 12	24 1	24 12
Alum	133 7	120 12	118 7	112 1	107 15	105 13	101 0
Lime	28 0	27 12	27 1	24 9	23 3	22 9	22 3
Soda Ash	214 13	179 3	175 0	161 6	162 14	160 11	167 0
Dyes	4,411 0	3,936 0	6,136 0	5,265 0	3,068 0	2,597 0	2,830 0

Enclosure No. 2.

Statement showing the quantity of coal consumed in each year since 1926 and average coal per ton of paper.

Particulars.	1926.	1927.	1928.	1929.	1930.
	Tons	Tons	Tons	Tons	Tons
Coal	14,885.15	15,542.00	15,342.75	15,212.3	15,363.00
Average coal per ton	5.45	5.83	5.34	5.32	5.68

Enclosure No. 3.

The Digestion of Sabai Grass for Paper Making by Fractional method.

	Present.
Soda Consumption on Sabai grass	12½%
Bleaching Powder used on unbleached pulp	8%
Steaming time of Digestion	6½ hours.
<i>Pulp yield—</i>	
Unbleached	42.32%
Bleached	38.09%
<i>Index figures of cost—</i>	
Cost of 1 lb. of Sabai grass	0.29d.
Cost of 1 lb. of Caustic Soda	2.13d.
Cost of 1 lb. of Bleach	1.16d.

The above rates of the Chemicals are those which we are paying at present and are not based on reduced costs due to Soda (Recovery or Electrolytic Bleach plants).

We are not in a position as yet to accurately estimate the reduction on costs which would be obtained by the adoption of these plants but we are giving two other calculations of Index figures based on the assumption that the costs of Caustic Soda and Bleach will be reduced to two-thirds and half respectively of the present costs:

On the basis of our present costs of Chemicals—

$$\frac{100 \times 0.29 + 12.5 \times 2.13 + 3.5 \times 1.16}{38.09} = 1.566 \text{ Index figure.}$$

On the basis of Chemicals (Caustic Soda and Bleach) costing two-third our present costs—

$$\frac{100 \times 0.29 + 12.5 \times 1.42 + 3.5 \times 0.773}{38.09} = 1.298 \text{ Index figure.}$$

On the basis of Chemicals (Caustic Soda and Bleach) costing half of our present costs—

$$\frac{100 \times 0.29 + 12.5 \times 1.065 + 3.5 \times 0.58}{38.09} = 1.164 \text{ Index figure.}$$

Enclosure No. 4.

Present day costs of complete Paper Mill Machinery based on recent quotations and purchases.

	£	
1. Grass Preparation Plant	5,602	
2. Grass Bleaching Department	2,873	
3. Beating Engines	4,500	
4. Presse Pate for Grass	4,734	
5. Rag Preparation Plant including Breaking and Bleaching Engines	3,765	
6. Soda Recovery Plant	10,137	
7. Bleach Storage Chests, Resin Size plant, Alum Dissolving plant and China Clay Mixer and Storage Chest	1,422	
8. One Paper Making Machine includ- ing Refiner and Cutter, etc.	28,729	
9. Miscellaneous:—Mill Cranes and River Fresh Water Pumps, etc.	2,717	
10. Electrical Equipment	11,610	
	<hr/>	
F.o.b.	76,089	
11. Sea Freight	5,312	
12. Insurance	1,142	
	<hr/>	
		Rs.
C.i.f. Calcutta	82,543	or 11,04,012
13. Landing and Forwarding . . . . .	...	3,984
		<hr/>
F.o.r. Howrah		11,07,996
14. Railway Freight . . . . .	...	52,549
		<hr/>
F.o.r. Bnz.		11,60,545
15. Power and Steam Plants including Steam Pipes and Valves, etc. . . . .	...	2,38,737
16. Contingencies . . . . .	...	1,50,000
17. Erection charges . . . . .	...	1,50,000
		<hr/>
TOTAL		16,99,282
		<hr/>

The above includes Soda Recovery Plant and Presse Pate for grass. These we do not possess at present. Their total costs are Rs. 1,98,900. If this amount be deducted from the total given above, the present costs of a Mill of the same capacity as ours work out to Rs. 15,00,382, that is, 15 lacs in round sum, the figure given by us in our written evidence.

Costs of Buildings (estimated) Rs. 8,00,000

The above machinery have been quoted by the manufacturers as being of 20 tons capacity. We, however, expect a daily output of 13-14 tons of paper of the qualities and substances we usually make.

Enclosure No. 5.

FORM No. III.

Particulars.	1930-31.	Remarks.
<i>Bamboo.</i>	Tons.	
1. Quantity of material used . . .	98	10 tons of pulp was left over unused. Hence necessary adjustment is made from 120 tons of bamboo.
2. Quantity of finished paper which the material represents . . .	4	
<i>Grass.</i>		
1. Quantity of material used . . .	1	This has not been brought into as it is still under investigation.
2. Quantity of finished paper which the material represents . . .	Nil.	
<i>Rags.</i>		
1. Quantity of material used . . .	30	
2. Quantity of finished paper which the material represents . . .	2½	
<i>Jute waste.</i>		
1. Quantity of material used . . .	6½	
2. Quantity of finished paper which the material represents . . .	3	
<i>Imported pulp.</i>		
1. Quantity of material used . . .	95	
2. Quantity of finished paper which the material represents . . .	81	
<i>Broke.</i>		
1. Quantity of material used . . .	19	6 tons of cuttings have been held over unused.
2. Quantity of finished paper which the material represents . . .	16	
<i>China Clay.</i>		
1. Quantity of material used . . .	21	
2. Quantity of finished paper which the material represents . . .	12-6	
<i>Total materials.</i>		
Total quantity of materials used . . .	270½	
Total quantity of finished paper which materials represents . . .	156	

THE UPPER INDIA COUPER PAPER MILLS CO., LTD.

B.—ORAL.

Evidence of Mr. G. P. BHARGAVA, Mr. J. N. SINHA and Mr. K. P. BHARGAVA, representing the Upper India Couper Paper Mills, recorded at Lucknow on Saturday, the 25th July, 1931.

President.—Mr. Bhargava, you represent the Upper India Couper Paper Mills Company?

Mr. Bhargava.—Yes.

President.—What exactly is your position in the Company?

Mr. Bhargava.—I am a Director.

President.—You are a Director of the Company?

Mr. Bhargava.—Yes.

President.—And Mr. Sinha?

Mr. Sinha.—I am the Manager.

President.—How long have you been connected with the Mills?

Mr. Sinha.—Since September 1925.

President.—Were you connected with the Couper Paper Mills at the time of the last enquiry?

Mr. Sinha.—No.

President.—What kind of experience did you have before you joined the Couper Paper Mills?

Mr. Sinha.—I was in England and in Germany for five years.

President.—As a student?

Mr. Sinha.—Yes, and as an apprentice.

President.—This is I suppose your first responsible position in a paper mill?

Mr. Sinha.—I was for a short time in the Carnatic Paper Mills.

President.—How long were you there?

Mr. Sinha.—I was there for a couple of months.

President.—Then you came here?

Mr. Sinha.—Yes.

President.—Did you come here as Manager?

Mr. Sinha.—I came here as an expert.

President.—As a Technical Adviser?

Mr. Sinha.—Yes.

President.—How long did you hold that position?

Mr. Sinha.—Until April 1928.

President.—Then you were appointed Manager?

Mr. Sinha.—Yes.

President.—I find from your reply to question 2 that the present capacity of your Mills is 13 tons of paper per day of 24 hours.

Mr. Sinha.—Yes.

President.—That is approximately 4,000 tons of paper a year.

Mr. Sinha.—About 3,600 tons on the basis of 280 working days per year.

President.—On the basis of 280 days a year, it is between 3,600 and 3,700 tons of paper in a year.

Mr. Sinha.—Yes.

President.—That is working two shifts?

Mr. Sinha.—Yes.

President.—At present, how many shifts are you working—just one?

Mr. Sinha.—No, two shifts.

President.—But then your output for the year 1930 was about 1,000 tons less than your capacity?

Mr. Sinha.—Yes.

President.—Was that because it was impossible for you to find a market for 3,600 tons or were there technical difficulties?

Mr. Sinha.—Partly that, but the 13 tons output that we have given is the maximum capacity. We can run our machines up to that output if we made certain classes of paper. That is our maximum capacity, but the average capacity I should say would be about ten tons per working day.

President.—If you were able to make heavier classes of paper then your tonnage on a two shift basis would be about 3,700 tons?

Mr. Sinha.—Yes.

President.—But if you made the sort of lighter paper that you generally make, the output per day would be roughly ten tons?

Mr. Sinha.—Yes.

President.—That was more or less your production last year.

Mr. Sinha.—Yes, in 1929 that was the production—2,800 tons and something more.

President.—In 1928 you were very nearly 2,800 tons.

Mr. Sinha.—More than 2,800 tons.

Mr. Boag.—It was 2,900 tons.

Mr. Sinha.—Yes.

President.—Including your wrappers?

Mr. Sinha.—Yes.

President.—In 1930 your output was a little over 2,700 tons including wrappers?

Mr. Sinha.—Yes, but during the last half year we had to go slow because there was overproduction.

President.—As the plant is arranged at present yours is on the whole a well balanced plant in this sense that for the maximum capacity of your paper machines it is possible for you to produce on your pulp plant an equivalent quantity of pulp.

Mr. Sinha.—We can.

President.—In that sense, it is a well balanced plant.

Mr. Sinha.—Yes.

President.—Now I understand you are proposing certain big extensions?

Mr. Sinha.—I think that Mr. Bhargava will be able to tell you more about the extensions.

Mr. Bhargava.—We are proposing certain extensions.

President.—Could you give us an idea of the sort of extensions you contemplate?

Mr. Bhargava.—You mean besides the power plant that we are putting up?

President.—I am thinking of the extensions which you contemplate for increasing the output.

Mr. Bhargava.—We intend putting in another paper machine including a pulp plant which will give us an output of say 3,000 tons a year.

President.—In addition to your existing capacity?

Mr. Bhargava.—Yes.

President.—That will raise your output of paper to 6,000 tons per year?

Mr. Bhargava.—Yes.

President.—It is a little more than 6,000 tons a year.

Mr. Bhargava.—Yes, slightly more.

President.—Has that scheme been definitely sanctioned by the Directors?

Mr. Bhargava.—We have invited quotations and some of them have arrived and some are expected to be here next month. After that, I think we will have to take the shareholders' sanction in the coming general meeting.

President.—It is rather in the nature of an idea at present; it has not developed into a definite scheme.

Mr. Bhargava.—We have passed a resolution as a matter of fact to the effect that we must buy a machine this year or next year at the latest.

President.—Your scheme for the installation of a new power plant has definitely been sanctioned?

Mr. Bhargava.—That has been almost half erected. The power plant that we are erecting has got capacity enough to take up the proposed new paper machine.

President.—When you have completed the erection of your new power plant without any additions to the paper machine or the pulp plant would you be able to get a better output than with the present power plant?

Mr. Sinha.—Yes.

President.—What kind of extension of output do you expect from that?

Mr. Bhargava.—I think 10 per cent.

Mr. Sinha.—More than that. Not less than 20 per cent.

President.—That is to say, with the new power plant you expect to raise your capacity to about 4,000 tons of paper.

Mr. Bhargava.—On the existing machines.

Mr. Sinha.—12 to 13 tons of the quality of paper we are making at present. That means 3,600 to 3,700 tons which is the capacity we gave you for heavier classes of paper.

President.—The increase in the capacity of the plant as the result of the new power plant is based I take it on the idea that an electrically driven plant will be able to extract more output from a given machine than a steam driven plant.

Mr. Sinha.—I would like to put it in this way. If we are driving paper machines electrically, we shall get a much smoother drive than what we are getting with the old fashioned reciprocating steam engines that we have at present. That is one thing. The next thing is that the beater house cannot get sufficient power at present from the existing main steam engines. When we have the new power plant working, we shall have much more power available for the beater house and consequently the beating capacity will be increased. In that way we will be able to speed up the machine. Now if we speed up the machine, our beater house lags behind. It cannot supply prepared pulp in sufficient quantities.

President.—So that really the point of that scheme is this, that even with the existing power plant it is possible for you to get more paper out of the paper machines, but then that increase in the paper machines would not be balanced by a corresponding increase in the beaters.

Mr. Sinha.—Yes.

President.—That is to say the introduction of electricity would primarily increase the capacity of the beaters. Am I right there?

Mr. Sinha.—Yes.

President.—Its primary effect is on the beaters.

Mr. Sinha.—That is one thing. Now our machines are being driven by independent smaller steam engines. In so far as they would be driven by electrical motors, we shall have a steadier drive. We can run the machines much faster than we can do now and can have a smoother run.

Mr. Bhargava.—With less breakage.

President.—Coming to your reply to question 3, I gather from your reply that you are unable to get accurate figures regarding the output of pulp as distinct from paper.

Mr. Sinha.—Quite right.

President.—So that these figures you give here are really figures which have been deduced from your paper output.

Mr. Sinha.—Yes.

President.—You can exactly measure your paper output and from the quantity so arrived at you are able by the application of a standard percentage to get your pulp output.

Mr. Sinha.—Yes.

President.—You say here “ Assuming however a loss of about 10 per cent. of unbleached pulp in the subsequent processes for paper making, the estimated pulp outputs are given below ”. Ten per cent. is rather on the low side, is it not?

Mr. Sinha.—I do not know.

President.—I take it what you mean here is that the conversion of wet unbleached pulp into finished paper would involve a wastage of 10 per cent.

Mr. Sinha.—Yes, on the assumption that if wet unbleached pulp had been reckoned on dry basis, we would have got those quantities.

Mr. Bhargava.—The moisture is taken off.

President.—That is to say, the ten per cent. loss is entirely the loss due to moisture.

Mr. Sinha.—It is a loss due to the processes.

President.—The processes result, as I understand, in losses arising partly from the loss of moisture in the drying process.

Mr. Sinha.—Not exactly that. We calculate this on air dry basis.

President.—This output of pulp that you give here is air dry pulp?

Mr. Sinha.—Yes, with 10 per cent. moisture.

President.—You take the paper output and add 10 per cent. to that. If you add the moisture to the paper output, you get your wet unbleached pulp.

Mr. Sinha.—The paper is also on air dry basis.

President.—The point that I want to get at is this. The air dry pulp is supposed to contain 10 per cent. moisture.

Mr. Sinha.—Yes.

President.—When you put your unbleached pulp through the paper machine, the loss that arises is not merely the loss resulting from the drying process; there is also a certain amount of mechanical loss, is there not?

Mr. Sinha.—Yes, there is.

President.—You have not made any allowance for that.

Mr. Sinha.—The ten per cent. loss is really the mechanical loss because the quantity of paper that we have given is calculated on air dry basis. Everything is on air dry basis.

President.—The paper is on air dry basis?

Mr. Sinha.—Yes. It is presumed to be on air dry basis, though there is generally about 6 per cent. moisture when we get the paper out of the machine.

President.—Regarding the output of paper generally is it the practice to give the figures on air dry or bone dry basis?

Mr. Sinha.—Air dry basis.

President.—The figures regarding the output of paper are on air dry basis?

Mr. Sinha.—Yes.

President.—You are a Chemist?

Mr. Sinha.—Yes.

President.—Tell us generally what are the various ways in which losses occur in the process of manufacture between the stage of unbleached pulp and the stage of finished paper.

Mr. Sinha.—The first is loss through bleaching.

President.—That is to say, when you bleach your pulp, a certain amount of oxidation takes place and as a result of that you get a certain amount of pulp damaged.

Mr. Sinha.—Yes.

President.—That is a chemical loss.

Mr. Sinha.—Yes.

President.—How exactly does the mechanical loss arise?

Mr. Sinha.—After the beating process, there is the straining process. The strainers would remove a lot of knots and things of that sort. There is a loss there.

President.—That is a mechanical loss.

Mr. Sinha.—Yes, there are other losses also. On the paper machine itself—on the wire—the back water will carry away some small fibres through the wire sieve. Though we use the back water again, we cannot use the whole lot. A portion is bound to be thrown away. There are of course pulp saving arrangements which we have not got. These are save-alls which save practically all the pulp that runs on the machine wire.

President.—That is to say, you can have a plant for the recovery of all the pulp that is lost mechanically?

Mr. Sinha.—Not all; not the stuff which runs out of the auxiliary strainers.

President.—That you cannot recover?

Mr. Sinha.—No. That we can use for very low qualities.

President.—We have a chemical loss. Then there is the mechanical loss. Then, the third loss is the result of drying.

Mr. Sinha.—No.

President.—You would not say that?

Mr. Sinha.—No.

President.—Because both are on air dry basis?

Mr. Sinha.—Yes.

President.—So, the losses are only chemical and mechanical losses.

Mr. Sinha.—Yes.

President.—Looking through your output of paper I find a very marked increase in your output between 1924 and 1925.

Mr. Sinha.—Yes.

President.—The output has increased from 1,693 tons to 2,469 tons. What really was the cause of that large increase?

Mr. Sinha.—In 1924 we were not running full time.

Mr. Bhargava.—Due to lack of orders.

President.—May I put it this way? That was the result of the Protection Act which was passed in 1925. It was the Protection Act which enabled you to get a bigger market and increase your output.

Mr. Sinha.—I should think so.

President.—Were you ever able before 1924 to get a better output than 1,693 tons?

Mr. Sinha.—Yes.

President.—I suppose during the war?

Mr. Sinha.—Yes, during the war years.

President.—What was the highest output previous to 1924?

Mr. Sinha.—I have figures only since 1911.

President.—Give me the highest output that you reached since 1911.

Mr. Sinha.—In the second half of the year 1917 we reached 1,721 tons.

President.—That was for a half year?

Mr. Sinha.—Yes.

President.—That was right in the middle of the war?

Mr. Sinha.—Yes.

President.—What was the output for the other half?

Mr. Sinha.—1,441 tons.

Mr. Bhargava.—3,200 tons nearly for the whole year.

Mr. Sinha.—The output in 1916 was higher even being 3,232 tons.

President.—When did the output begin to fall off?

Mr. Sinha.—In 1920.

President.—Since then, it steadily declined?

Mr. Sinha.—Yes.

President.—Until 1925?

Mr. Sinha.—Yes.

Mr. Bhargava.—In one of the reports of the half year you will find it mentioned that one machine was working in 1924; there is a paragraph saying that despite reduction in wages, prices of raw materials, coal, etc., and various attempts at economies we have not been able to

President.—Practically, I suppose, with the downward trend in European pulp prices which started a little before 1924 and has steadily continued ever since, you would probably have been compelled to curtail your production but for the Protection Act. That is really the position, is it not?

Mr. Bhargava.—Yes.

President.—From this statement of the classes of paper that you manufacture (question 4) I find that nearly 70 per cent. of your output represents badami and browns, taking them as superior badami, ordinary badami and browns.

Mr. Sinha.—That is right. The superior badami and unbleached are better bleached than badami, that is, practically 80 per cent. bleached white, whereas badami is very much inferior in colour.

President.—Ordinary badami in relation to superior badami, represents 3: 8?

Mr. Sinha.—I should not give a figure like that: it is very much lower in colour I should say. Superior badami, unbleached or semi-bleached is only one pie cheaper than white printing whereas badami is, I believe, about 5 pies cheaper than semi-bleached, so you will see that there is a good deal of difference.

President.—If you take competition from imported paper of these two classes of paper—superior and ordinary badami—which of it is more open to competition from mechanical wood papers?

Mr. Sinha.—Ordinary badami.

President.—May I take it that superior badami practically does not come into competition with mechanical wood paper?

Mr. Sinha.—I should say it does. There are people who cannot distinguish good from bad paper and they would buy buff coloured paper with a lot of mechanical pulp in it.

President.—That is to say if you take bazar sales, the ordinary purchaser in the bazar is not in a position to appreciate correctly the quality of superior badami?

Mr. Sinha.—Not always.

President.—And as far as that class of purchaser is concerned it is not unlikely that he might on the ground of price prefer imported mechanical wood paper to superior badami?

Mr. Sinha.—That is right.

President.—As far as ordinary badami is concerned there is a great deal of competition?

Mr. Sinha.—Yes.

President.—May I put it this way: If you take the bulk of your sales of ordinary badami, is it correct to say that that is sold in competition with imported mechanical wood paper?

Mr. Sinha.—It is very difficult for us to say definitely. What I should say is that all the cheaper qualities of paper under which badami comes are surely liable to competition from imported mechanical wood pulp papers which are also cheap papers.

President.—Are you in actual touch with sales in the bazar?

Mr. Sinha.—Not much because we sell through agents. You will find from our replies that we were not in a position to reply to some of the questions relating to the market.

President.—On what basis do you sell your papers to your agents?

Mr. Bhargava.—We give it to them on consignment a/c, and take a security.

President.—And they sell it in the bazar at whatever price they can fetch?

Mr. Bhargava.—No. We fix the price and give them a commission.

President.—That must enable you to say whether ordinary badami comes into competition with mechanical wood pulp paper because the price which you fix is in comparison with the price of imported wood pulp paper and that must give you an indication.

Mr. Bhargava.—We do not really know the prices at which imported mechanical wood paper of that colour sells in the market.

President.—I will tell you exactly the point I am trying to get at. Assuming there was no protection at all—I mean this protective duty of one anna—as far as ordinary badami paper is concerned would it have made any perceptible difference to the price that you get for it?

Mr. Sinha.—That is a very difficult question for us to answer.

President.—I find from the trade returns that about 6,000 to 8,000 tons of printing paper are landed in Calcutta which do not pay the protective duty and I assume that no protective duty is paid on these papers for the reason that they satisfy the Customs test with regard to newsprint; that is to say, these 6,000 to 8,000 tons are paper which are supposed to contain more than 65 per cent. mechanical wood pulp. If the ordinary badami paper comes into competition with that class of paper then obviously as far as that paper is concerned a protective duty would do no good, and conversely if the protective duty were removed it would suffer no harm.

Mr. Sinha.—That is so.

President.—Could you tell me how much of your badami paper is sold to Government? We asked the Controller of Stores to give us the quantities purchased from the various Indian mills, but I don't know if the classification that the Controller has given us is sufficiently accurate for us to base any conclusions as far as this point is concerned. In 1930-31 the Controller purchased from you 418 tons of white printing, 359 tons of unbleached printing, and 350 tons of badami. Am I right in thinking that this 359 tons of unbleached paper are really your superior badami?

Mr. Sinha.—Yes they are.

President.—Have you got figures showing the prices that you got?

Mr. Sinha.—I have not got them here but I will send them to you.

President.—Because if it turns out that the price you got for ordinary badami is much lower than the price you got for unbleached, that it corresponds more to the price of mechanical wood papers in the market, then that would give us an indication of the sort of competition you are faced with.

Mr. Sinha.—I can only say that it would be very likely As. 3 or a little less and unbleached would be something like 5 pies higher than that.

President.—At the mills?

Mr. Sinha.—Yes.

President.—Then obviously he is paying for it on the basis of the protective duty because if you did not take the protective duty into account you would get considerably lower than that.

Mr. Sinha.—That is so.

President.—Of course there is another difficulty there. What proportion of your badami output is sold to Government? In 1930-31 the Controller bought 359 tons of superior badami and 350 tons ordinary badami, that is to say he bought about 700 tons of unbleached and ordinary badami combined.

Mr. Sinha.—Yes.

President.—My point is this. You sold in 1930-31 about 700 tons of badami to Government. From the price that you have given us now it would appear that the whole of that badami paper was purchased by the Controller on the basis that if that paper were imported it would bear the protective duty, otherwise you would not get 3 annas for your ordinary badami.

Mr. Sinha.—Possibly so. Of course unbleached or semi-bleached is not reckoned as badami; it would be better to reckon it as separate paper.

President.—Taking your ordinary badami you would not get 3 annas for your ordinary badami in the market to-day?

Mr. Sinha.—We do get that from the market. Our rates are above 3 annas in the market.

President.—You are able to get for your ordinary badami practically the same price in the market as you get from the Controller of Stores?

Mr. Sinha.—Rather more than less.

President.—And it is not less than 3 annas? What is the present price for badami in the market?

Mr. Sinha.—It is about 3 annas: thin papers are 3 pies above 3 annas and the thicker ones just a shade above 3 annas.

President.—Then subject to further consideration I should say that as far as your ordinary badami is concerned, on the whole the prices that you get in the market and from the Controller of Stores are determined on the basis that corresponding imported paper would bear a protective duty rather than a revenue duty because imported mechanical wood pulp paper imported into this country bearing a duty of 15 per cent. would never reach as high a figure as 3 annas.

Mr. Sinha.—Of course not.

President.—So that subject to any other circumstances which may be brought to our notice hereafter it is fairly safe to say that your badami price is determined more on the basis of the protective duty.

Mr. Sinha.—Yes.

Mr. Rahimtoola.—Mr. Bhargava, you told us just now that you are a Director of the Company: Are you Managing Director?

Mr. Bhargava.—No.

Mr. Rahimtoola.—You are one of the directors of the Company?

Mr. Bhargava.—Yes.

Mr. Rahimtoola.—Have you been authorised by the Directors at their meeting to represent the Company before us?

Mr. Bhargava.—Yes.

Mr. Rahimtoola.—How long have you been a director of this Company?

Mr. Bhargava.—For the last nine years.

Mr. Rahimtoola.—I understand there is no such thing as a Managing Agency system in your company?

Mr. Bhargava.—No.

Mr. Rahimtoola.—Mr. Sinha, you said that you were for a couple of months in the Carnatic Mills?

Mr. Sinha.—Yes. I was there in July and August 1925.

Mr. Rahimtoola.—It was before you joined this Mill?

Mr. Sinha.—Yes.

Mr. Rahimtoola.—In what capacity?

Mr. Sinha.—As paper and pulp expert.

Mr. Rahimtoola.—What was the exact reason for your leaving that mill?

Mr. Sinha.—They closed down. And then I got this job here before they gave me notice.

Mr. Rahimtoola.—It is stated in your replies to questionnaire that the superior management is wholly Indian since 1925.

Mr. Bhargava.—Yes.

Mr. Rahimtoola.—Do you find that the mill is working all right?

Mr. Bhargava.—Yes.

Mr. Rahimtoola.—You have not found that to be a handicap?

Mr. Bhargava.—No.

Mr. Rahimtoola.—All the people that you have got in your mill were more or less apprenticed before they took up jobs?

Mr. Bhargava.—Yes, except the Manager.

Mr. Rahimtoola.—They were all trained by the European superior staff that you had before 1925?

Mr. Bhargava.—Most of them, and some have been trained afterwards too.

Mr. Rahimtoola.—You don't find that the mill has suffered at all by making it wholly Indian so far as the technical and superior staff are concerned?

Mr. Bhargava.—Not at all.

Mr. Rahimtoola.—You told us just now that the Board is contemplating a definite scheme of expansion and that a resolution to that effect has been carried in the Directors' meeting. Do I understand that the scheme will be carried out irrespective of whether protection is granted or not?

Mr. Bhargava.—Of course the Directors might wait for the result of this enquiry.

Mr. Rahimtoola.—What was the exact resolution?

Mr. Bhargava.—There is no reference to protection there.

Mr. Sinha.—They might have assumed that protection would be given or they might await the result of the enquiry.

Mr. Rahimtoola.—You say that when the scheme is fully completed you would be in a position to turn out 13 tons a day in 24 hours in two shifts?

Mr. Sinha.—With the present machinery and the new power plant between 12 and 13 tons: we should say 20 per cent. on our present average output.

Mr. Rahimtoola.—You told us that there was a chemical loss during the process.

Mr. Sinha.—Yes, from the unbleached to the paper making stage.

Mr. Rahimtoola.—You have said that there is a possibility, if a certain machine is installed, you might be able to recover a certain percentage or save a certain amount of fibres.

Mr. Sinha.—That is the mechanical loss in the machine itself from the back water by installing save-alls.

Mr. Rahimtoola.—Are the Directors thinking of installing that machine?

Mr. Sinha.—Yes, that would come in it.

Mr. Rahimtoola.—Are you selling a certain amount of superior badami, ordinary badami and browns to the Government of Bihar and Orissa?

Mr. Sinha.—This year we have neither sold superior badami nor semi-bleached to the Government of Bihar and Orissa.

Mr. Rahimtoola.—Are you selling anything to the Controller of Printing, India?

Mr. Sinha.—We are selling water mark paper, plain, to the Government of Bihar and Orissa.

President.—That is white writing paper?

Mr. Sinha.—That can be classed as white writing paper.

Mr. Rahimtoola.—Do you find any difficulty in disposing of the ordinary badami paper?

Mr. Sinha.—No. We consider that our badami is the best badami in India because, we find, in spite of our higher rates, we sell. We have got higher rates than the other mills in India.

Mr. Rahimtoola.—According to your opinion it amounts to this that there is practically no competition for your ordinary badami.

Mr. Sinha.—I should not say that. Many people prefer cheaper paper and if they get it cheaper, they will buy. In our badami we put a lot of good stuff. In ordinary Indian badami paper at the present moment I see a lot of waste paper or things like that.

Mr. Boag.—Could you tell us exactly what position these three Europeans held in the mill in 1923-24?

Mr. Sinha.—Two of them were machine men and one beater man.

Mr. Boag.—When did they leave?

Mr. Sinha.—When I came, there were two. In 1926 one left and at the end of 1927 the other one left.

Mr. Boag.—You said that your production was reduced owing to over-production.

Mr. Sinha.—Yes.

Mr. Boag.—How exactly did that come about?

Mr. Bhargava.—Owing to the slump in the market. We had our stocks full.

Mr. Boag.—You regulate your production by the orders that you get?

Mr. Bhargava.—Yes.

Mr. Boag.—The paper that you produce is ordered before it is made?

Mr. Bhargava.—Yes, most of it. We have to keep some stock for our agencies also and sometimes in advance for Government orders. Generally we adjust our making of paper according to the requirements.

Mr. Boag.—You said that your agents sell on commission?

Mr. Bhargava.—Yes.

Mr. Boag.—What is the rate of commission?

Mr. Bhargava.—It used to be a minimum of 5 per cent. and a maximum of 8 per cent. It is on a sliding scale.

President.—How do you calculate that 5 per cent.?

Mr. Bhargava.—That is a sliding scale.

Thousands.	Per cent.
25 to 50	8
50 to 100	9
Over 100	10

President.—That is to say when you sell on commission to an agent, the commission that he gets, 5 per cent. to 8 per cent., is calculated on the price that he receives from the dealer, am I right?

Mr. Bhargava.—No.

President.—For example you fix a particular price for paper. Assume it is As. 3. When you give it to the commission agent the commission agent is expected to sell it to the dealer at 3 annas, is that right?

Mr. Bhargava.—Not more than 3 annas. He may sell it for 3 annas or less.

President.—On what price precisely is the 5 per cent. calculated?

Mr. Bhargava.—On the 3 annas and that rebate is allowed at the end of the year when the total is made up, but he keeps on getting 5 per cent.

President.—That is to say these commissions would be entered as selling expenses.

Mr. Bhargava.—There is a heading in the balance sheet “Commission on sales”.

President.—I am looking at it like this. I do not know how exactly your profit and loss statement is made up. Your total realisations during a particular year would be based on the total amount of paper that you sold and the price at which you gave it to your commission agent for sale. From that the commissions paid to the Agent are deducted as selling expenses in order to get at your nett price.

Mr. Bhargava.—The nett amount is posted as sales.

President.—In the accounts.

Mr. Bhargava.—The gross amount is shown as paper sales. From that the amount payable to the agents is shown as selling expenses on those sales.

President.—Arising from that point how do you show freight in your statement of profit and loss?

Mr. Bhargava.—In the same way as commission. Freight is deducted from the invoices.

President.—That is to say this 3 annas at which paper is given to the commission agent is not the price *ex-mills*. That 3 annas is the price delivered at a particular locality.

Mr. Bhargava.—Quite so.

President.—3 annas is the price *f.o.r.* say Cawnpore or whatever place.

Mr. Bhargava.—Yes.

President.—Then from your sale proceeds you deduct the commissions payable to the agent *plus* the freight in the accounts.

Mr. Bhargava.—There is a maximum limit in regard to freight payable. If the freight is more than 4 pies they (the agents) will have to pay.

Mr. Rahimtoola.—I think your Agent pays.

Mr. Bhargava.—The customer pays if the freight to his place is more than 4 pies.

Mr. Rahimtoola.—You just now told us that the agent is not allowed to sell beyond a certain figure given by you. That figure includes the commission of that particular agent, does it not?

Mr. Bhargava.—Yes.

Mr. Rahimtoola.—In the commission also there is included a maximum freight of 4 pies.

Mr. Bhargava.—Yes.

Mr. Rahimtoola.—If the freight is higher, it is quite clear that he will have to raise the price of particular paper beyond what you have fixed.

Mr. Bhargava.—Yes.

President.—If that is the way in which your books are made out, would it be possible for you to give us the average freight incurred by you on your total sales?

Mr. Bhargava.—Yes.

President.—Could you give me the average railway freight for 1930 per ton of paper?

Mr. Sinha.—That would not be possible, because we sell a part of our output to Government to whom we deliver f.o.r. Badshanagar, that is, our railway siding, whereas in what we sell to bazaar, freight is included. We can give you an average freight on bazaar sales.

Mr. Boag.—You can give us the quantity of paper you sell in the bazaar?

Mr. Sinha.—Yes.

President.—Deduct the quantity sold to Government and give us the figures.

Mr. Sinha.—Yes.

President.—What we want is the average freight per ton of paper in 1930.

Mr. Sinha.—Yes.

Mr. Bhargava.—For bazaar sales?

Mr. Boag.—Yes.

President.—Coming to Question 6, I notice you have revised these figures.

Mr. Sinha.—We have.

President.—That is with reference to the quantity of wrappers made.

Mr. Sinha.—Not exactly. We had those figures by a process of estimation on commercial scale from the actual wet pulp we got from the boiler combined with laboratory tests for moisture. We never make dry pulp. What we did was that we got the wet pulp from the boiler and we knew how much raw materials we had put in it. Out of that wet pulp we took a representative sample, we determined the moisture in the laboratory on that representative sample and in that way we deduced the percentage of dry pulp we obtained from the quantity of raw materials we put in the boiler.

President.—On that the original figures were calculated?

Mr. Sinha.—Yes, but now I find that they can't be accurate, because a little error in the tests on the sample we took might upset the figures. Supposing the stuff thus sampled out actually contained more moisture than what the tests gave, that would upset the whole figures.

President.—How exactly have you revised them?

Mr. Sinha.—We have revised them in this way. First of all we calculated the quantity of paper obtainable from each material on our previous percentage output basis. Then we totalled these and found the total to differ from actual output of paper. Small adjustments were then made in the percentages outputs so that these may be more in accord with our actual outputs of paper.

President.—You have taken a closer approximation to actual output?

Mr. Sinha.—Yes.

President.—One point that occurs to me by looking through these figures is that you got a larger proportion of yield from rags, hemp and jute than from grass.

Mr. Sinha.—Quite right.

President.—I take it the explanation of that is that out of hemp and jute, for example, you make an inferior class of paper.

Mr. Sinha.—No, not out of hemp. Out of jute we make an inferior quality of paper.

President.—Am I right in thinking then that you are able to extract more cellulose from hemp than from grass?

Mr. Sinha.—Yes. Hemp contains more. Much of the loss is really due to dirt and dust we get in the hemp. If it were new hemp fibre, we would get a much higher yield than given here. The same is the case with jute and rags.

President.—Suppose you try to make white paper from each of these various classes of raw materials, then in that case the proportion of paper that you get from jute and hemp would be lower?

Mr. Sinha.—Yes. From jute we don't make white paper.

President.—Could you do it?

Mr. Sinha.—That would be very expensive.

President.—It would mean an enormous consumption of bleach?

Mr. Sinha.—Not only that, but quite a different process. With the ordinary caustic soda or lime boiling we can never make it pure white.

President.—If you are simply taking the unbleached pulp yielded by these materials, the figures that you give for hemp and jute would be more or less correct?

Mr. Sinha.—Yes. Only one thing, I would like to add. As regards rags, hemp and jute which represent the strong raw materials, these contain, as we get them, a lot of dust and other extraneous matters; otherwise from rags we could get 99 per cent. pulp.

President.—Provided you are able to select your rags.

Mr. Sinha.—It is not possible.

President.—It is a very theoretical proportion.

Mr. Sinha.—Supposing we get new tailor cuttings without much starch or loading in it, we shall get almost a full output.

Mr. Rahimtoola.—You would have to pay much more for it?

Mr. Sinha.—Yes.

President.—In connection with Question No. 7 assuming that this new paper machine is going to be installed with corresponding pulp equipment, would you be able to get the necessary quantity of raw materials?

Mr. Sinha.—We believe so.

President.—What is the sort of raw material that you would be able to get in increased quantities?

Mr. Sinha.—Grass, and the other existing raw materials to a smaller extent.

President.—If your new machinery comes into operation, you would be making 3,000 tons of paper more. That would mean you would be making about 3,400 tons of pulp approximately.

Mr. Sinha.—Yes.

President.—For that you would require about 8,500 tons of raw materials. There would be no difficulty in getting this extra 8,500 tons of grass?

Mr. Sinha.—I don't think so, because even now the Titaghur Paper Mills are making 2,000 tons or more of bamboo pulp which means 6,000 or 7,000 tons of raw materials. They had possibly been making all that pulp out of other indigenous raw materials which should therefore now be available to others.

President.—Where do you get your grass from?

Mr. Sinha.—Mostly from the Nepal Hills.

President.—Would you be able to tell us what approximately is the distance from here to your grass area?

Mr. Sinha.—I couldn't tell you the mileage, but the freight would be about 3 annas a maund.

President.—Is that the area from which the other mills are also drawing? What do you call that?

Mr. Sinha.—A portion of that is in Western Circle. Also a lot comes from Nepal State forests.

President.—You have made no definite investigation of the supplies available?

Mr. Sinha.—We have.

President.—If you have definitely decided upon this new plant, this point would be important.

Mr. Sinha.—We don't like to push the matter further at this stage, because in that case we may not be able to secure favourable terms.

President.—If you wanted to increase your output to that extent, your requirements of raw materials would be got from the grass area?

Mr. Sinha.—Yes.

President.—The increase would be mainly in respect of grass?

Mr. Sinha.—Yes.

President.—Would it be possible for you to increase considerably the quantities of rag that you are getting?

Mr. Sinha.—I think so. If an attempt were made, it would be possible to get more. At the moment we get our requirements mostly from the United Provinces. Supposing our contractors go further afield, we would be able to get more.

Mr. Bhargava.—Even in the United Provinces they are not finding any difficulty in supplying rags to us.

President.—I gather—and the statement is not by any means to be taken as a definite statement—that as far as the Bengal side is concerned, the limit has been reached with regard to the supply of rags.

Mr. Sinha.—In Bengal, so far as my information goes, the Titaghur Paper Mills use very little of the sort of rags which we use.

President.—Do they use cleaner rags?

Mr. Sinha.—Yes. Only the other day we had a man offering us any amount of rags which we would like to have from Calcutta side at the same rate as we are getting at present. We can give you the references of the firm if you like.

President.—The importance of that point is this. You would probably remember that when the Board reported in 1925, the Board made the suggestion that if any substantial development of the paper industry in India was going to be undertaken it would be difficult to get a corresponding increase in the supplies of rags available in the country; that is to say, they came to the conclusion that the limit had probably been reached with regard to grass—at any rate the supplies of grass available at an economic cost. The limit had been reached also with regard to rags. Therefore the only material on which the paper industry was dependent if a large development of the industry was undertaken was bamboo. That was the general argument.

Mr. Sinha.—Yes.

President.—Now as far as I can gather, on the Bengal side, so far as rags are concerned, the proposition is accepted. We are keeping the question of grass under consideration. Now I want to know from you as a result of your experience since the Protection Act was passed whether the proposition with regard to rags in this part of the country is correct.

Mr. Sinha.—We really cannot accept it as correct. Nor can we definitely say that it is not. As we have said in our written evidence, we can only say that we are having no difficulty in getting our supplies from contractors and that if we wanted more they would give us.

President.—In 1925 your output was 2,469 tons. In 1930, it was 2,600 tons, excluding wrappers. To a very large extent the output remains steady as between these two years.

Mr. Sinha.—Yes.

President.—Has there been any change in the proportion of rags?

Mr. Sinha.—If anything, as compared with 1925 figures, it has gone up. Still we have no difficulty.

Mr. Bhargava.—We are buying more rags than before.

Mr. Rahimtoola.—Is it not a fact that when you started to discuss the expansion scheme, you did investigate the question about the raw material which you would require for this expansion?

Mr. Sinha.—As regards grass, we are almost sure that we would be able to get enough grass for the other machine. Regarding rags we are in close touch with the contractors who supply rags to us.

Mr. Rahimtoola.—You contemplate doubling your output?

Mr. Sinha.—Yes.

Mr. Rahimtoola.—Naturally therefore you will have to rely more or less on the large amounts of raw materials which will be required.

Mr. Sinha.—Yes.

Mr. Rahimtoola.—Do I understand that the Board of Directors have not seriously paid any attention to this aspect of the question before launching the scheme?

Mr. Sinha.—They have.

Mr. Rahimtoola.—What is their investigation?

Mr. Bhargava.—I don't understand your question.

Mr. Rahimtoola.—Mr. Sinha will be able to tell me that.

Mr. Sinha.—Our idea is that in our new plant we shall be using 75 per cent. grass and 25 per cent. of other raw materials. On that basis we have sent our specifications to the manufacturers.

Mr. Rahimtoola.—I take it that you have investigated the position on that basis and that you are of opinion that there will not be the slightest difficulty.

Mr. Sinha.—I would not say that there would not be the slightest difficulty, but we think we will be able to get our supplies.

Mr. Rahimtoola.—At present rates or increased rates?

Mr. Sinha.—I believe that we shall be able to make arrangements and get our materials at lower rates. We cannot make final arrangements at present. We cannot push those arrangements too far before we place the final orders for the machine. If we did that, it is quite likely that favourable terms might not be secured. We want to do both things together.

President.—What is the price that you are now paying for grass?

Mr. Sinha.—The lowest price was Re. 1-8 per maund delivered at the mill.

President.—How much is it per ton?

Mr. Sinha.—Roughly about Rs. 41.

President.—Will you look up Form II?

Mr. Sinha.—There are two of them.

President.—Take the supplementary one. Is that the cost per ton of paper or per ton of material?

Mr. Sinha.—That is per ton of paper.

President.—What is the present price that you pay for grass?

Mr. Sinha.—Rs. 41 per ton.

President.—The price that you paid in 1924, was it higher than this?

Mr. Sinha.—It was at least Rs. 27 higher than that.

Mr. Bhargava.—It was more than double in any case.

President.—What is really the cause for the large reduction in the price of grass?

Mr. Sinha.—The down country mills—for instance the Titaghur Paper Mills—are starting to use bamboo. That is one thing. The next thing is

that so far as we are concerned, we would not use any wood pulp before. We did not use any in 1925 or 1926. Afterwards we started using it. We always wanted to have good grass for better qualities of paper. In fact we wanted more grass. The contractors knew that we would preferably have grass and therefore they thought that they could increase the price. Later on when we found that out, we started using small quantities of wood pulp. We told them that if we did not get a reasonable price, we would use more wood pulp.

President.—It is really the possibility of getting alternative materials that is responsible for the reduction in the price of grass?

Mr. Sinha.—Yes.

President.—Did you have any difficulty in regard to jute?

Mr. Sinha.—No.

President.—How exactly do you get jute for your mills—in the form of second-hand gunnies?

Mr. Sinha.—Yes, also rope cuttings.

President.—There has been no reduction in supplies?

Mr. Sinha.—No.

President.—Nor has there been any increase in price?

Mr. Sinha.—There has been a fall in price. We had offers for more supplies if we wanted.

Mr. Boag.—There is just one point which I should like to ask you and that is this. For the last four years you have been using steadily smaller quantities of grass each year. In 1927, you used 1,800 tons, in 1928, 1,700 tons, in 1929, 1,260 tons and in 1930, 1,064 tons. That does not look as if the supplies were unlimited. What is the explanation for that?

Mr. Sinha.—The explanation is the same as that which I gave in reply to the President's last question. The price of grass has gone down considerably only this year. Last year we paid Rs. 2-3. It is only this year that the price has gone down considerably. What we found was that if we used grass at Rs. 2-4, it did not pay us.

President.—The reduction in the price of grass that you are talking about has occurred only this year?

Mr. Sinha.—Only this year a considerable reduction has taken place. We kept on steadily using less and less grass to demonstrate to the contractors that we were independent of them.

President.—With regard to Question 10: what is the freight that you pay on coal?

Mr. Sinha.—Rs. 6-14-9 including transshipment charges.

President.—Where do you get your coal from?

Mr. Sinha.—From Jheria fields.

President.—Is it first class coal?

Mr. Sinha.—It is 1st grade coal.

President.—That is to say, it is really 1st grade—am I right in calling—slack coal?

Mr. Sinha.—No, it is 1st grade steam coal.

President.—What is the price that you pay at the pit's mouth?

Mr. Sinha.—Rs. 3-4.

President.—You pay a freight of Rs. 6-10?

Mr. Sinha.—Yes.

President.—That is about Rs. 10.

Mr. Sinha.—Yes.

President.—Have you got any figures showing the consumption of coal per ton of paper? What I want is not the cost of coal per ton of paper but the consumption of coal per ton of paper.

Mr. Sinha.—I can only give it approximately just now. It is about 6 tons of coal per ton of paper.

President.—I want the quantity of coal that you consume per ton of paper.

Mr. Sinha.—About 6 tons of coal.

President.—Nearer 6 than 5?

Mr. Sinha.—Quite right.

Mr. Bhargava.—It is a much bigger quantity than it should be.

President.—It is 5.9 tons.

Mr. Sinha.—Yes.

President.—It is very nearly 6 tons.

Mr. Sinha.—Yes, we reckon as 6 tons.

President.—That is to say, per ton of paper you are paying Rs. 40 in the shape of freight per ton of paper.

Mr. Sinha.—Yes.

President.—This new power plant that you are erecting, would that be able to consume inferior coal?

Mr. Sinha.—Yes.

Mr. Bhargava.—And also less coal.

President.—You are expecting, as the result of using inferior coal and as the result of appliances for saving power or economising power, that you might be able to reduce considerably the consumption of coal per ton of paper?

Mr. Sinha.—First of all, we would be able to use slack and rubble coal. There is often a difference between the prices of steam coal and of slack and rubble.

President.—What is the difference?

Mr. Sinha.—It differs according to different collieries. It averages about 8 or 10 annas per ton of coal. The new power plant would be very much more efficient than what we have and the steam plant also would be very much more efficient.

Mr. Bhargava.—The boiler plant, the generating plant and transmission also will be more efficient.

President.—With regard to Question 12 about the prices of imported pulp, I find that the latest price that you give in your statement is £11-10 for easy bleach. Have you made any purchases more recent than that?

Mr. Sinha.—I believe we have.

President.—Have the prices come down since then?

Mr. Sinha.—A little bit. About a couple of weeks ago we purchased some. We will send you the price c.i.f. Calcutta.

President.—How do you make your purchases of imported pulp? Do you import direct?

Mr. Sinha.—Yes, from Scandinavia.

President.—Have you tried to import from America?

Mr. Sinha.—Not from America direct but we have had some consignments through European firms.

President.—We were told quite recently that imported pulp coming from America was sold at a considerably lower price than pulp from Scandinavian countries.

Mr. Sinha.—We purchased a few lots of American pulp but through Scandinavian firms, and we found them to be cheaper.

President.—In reply to 13 (b) you make the statement that the Government of India sometimes specify the inclusion of a certain percentage of sulphite wood pulp. What class of paper is that?

Mr. Sinha.—Generally what they call writing papers.

President.—What is the real point in including sulphite wood pulp?

Mr. Sinha.—I don't know.

President.—I should have thought that paper made as you do out of grass would be rather hard for the purpose of printing and therefore an addition of a certain amount of sulphite wood pulp would render it softer and make it more suitable for printing, but I cannot understand why it should be included in writing paper.

Mr. Sinha.—I really don't know the reason why it was put there and very likely they have dropped it out from their recent specifications. But as we are not interested in tendering for writing paper I cannot give you accurate information. But I shall look up a recent specification and let you know.

President.—Is it true that in the specifications laid down by the Controller of Stores there is preference given to papers made out of indigenous materials?

Mr. Sinha.—Possibly, because they say in the recent specifications that it should be stated what sort of raw materials are used; they apparently want to know the constituents of the furnish.

President.—Has that been in the specification all along or is it a recent innovation?

Mr. Sinha.—I think it is recent, but I am not sure about it.

Mr. Rahimtoola.—I have seen the statement which you give here regarding the consumption of coal in which you state that in 1924 the quantity used was 7.29; then you came down in 1926 and then went up again in 1927. What was the reason?

Mr. Sinha.—That was very likely due to the difference in output.

Mr. Rahimtoola.—Your output in 1927 and your output in 1930 are practically the same but there is a difference in the quantity of coal used.

Mr. Sinha.—There are so many factors; that might have been due to the difference in the qualities of coal for instance.

Mr. Rahimtoola.—If you look at the figures for 1926 and 1930 (Form II) you will find that in 1930 the output is bigger and still the consumption of coal is higher—5.60 in 1926 for 2,568 tons and 5.90 in 1930 for 2,600 tons of paper.

President.—I rather think it also indicates that your crushing plant is reaching the last stage of efficiency.

Mr. Bhargava.—May be.

Mr. Sinha.—One of the reasons is that formerly it was very difficult for us to estimate the quantity of coal left at the time of stock taking as the estimates used to be made from the bulk left there and there used to be a lot of shortages or excesses. After that we started actual weighing.

President.—When did that begin?

Mr. Sinha.—About 1928.

President.—You might look into that point and let us know.

Mr. Sinha.—I shall look into that.

Mr. Rahimtoola.—As regards your answer to 13 (b) I would like to know if there was any correspondence between you and the Government of India.

Mr. Sinha.—None at all.

Mr. Rahimtoola.—That means that a certain amount of wood pulp is more or less compulsory?

Mr. Sinha.—Yes, for certain qualities of paper.

Mr. Rahimtoola.—And for these qualities they say that a certain amount of wood pulp is necessary: is there any correspondence on that?

Mr. Sinha.—None at all. They had it in the specifications and we used 30 per cent. wood pulp. But I myself don't think that it is necessary at all. I can only assume that as wood pulp can be obtained in a very highly bleached

state and they wanted the paper to be whiter than could be made from Indian pulps they put that condition. Possibly that was the idea.

Mr. Rahimtoola.—That is merely a conjecture?

Mr. Sinha.—Yes.

President.—You have no direct information about the position of the wood pulp industry in Europe? The only information you have is from the trade journals?

Mr. Sinha.—Yes, and from firms from whom we purchase pulp.

President.—Coming now to question 16 (b), you are now using the process of fractional digestion, and you think that it has led to a considerable improvement in the quality of the paper and also in your costs?

Mr. Sinha.—Yes.

President.—The method of fractional digestion as employed in your mill is based practically on Raitt's method. Am I right in thinking that it is a reproduction of Raitt's plant?

Mr. Sinha.—Yes, only with slight modifications made by us.

President.—We have not seen the Dehra Dun plant yet but reading about it I gather that the kind of plan by which Mr. Raitt tries to carry out his principle of fractional digestion is that the boiling is done in three digesters.

Mr. Sinha.—They have got only two I believe.

President.—Is the first stage of the boiling done in the one digester and the second in another?

Mr. Sinha.—The whole boiling is done in one digester.

President.—That is to say, you have got two digesters, each of them fed with grass or whatever the raw material is and then the liquor which is emptied out of the first digester at the end of the first stage of boiling, is that used for the first stage of boiling in the second digester?

Mr. Sinha.—No. That is thrown away or sent to the recovery plant. It is the liquor obtained from the second digestion of the process that is used for the first digestion on a subsequent occasion.

President.—The second boiling is done with a fairly intense solution of caustic and the first is done with a mild solution?

Mr. Sinha.—The first is done with the liquor obtained from the second digestion which is done with fresh caustic liquor.

President.—The first digestion is done with the liquor that comes out of the other digester after the second boiling?

Mr. Sinha.—Yes.

President.—And the second stage of boiling is done with fresh caustic solution?

Mr. Sinha.—That is right.

President.—That is precisely the method you use?

Mr. Sinha.—Yes.

President.—The whole principle of this is that if you take the composition of grass or any of these fibrous materials there is a certain portion which is more easily dissolved than the rest?

Mr. Sinha.—That is so.

President.—But this portion which is more easily dissolved happens to be more deleterious from your point of view?

Mr. Sinha.—Yes, that colours the pulp.

President.—Therefore on this method you are able to remove that part of the material at a lower temperature and with a lower expenditure of caustic?

Mr. Sinha.—Quite so.

President.—There is not merely this saving in your power and your caustic but you are able to get a better quality of cellulose because the removal of

this deleterious substance prevents any further discolouration from that source, so that the result of employing the method of fractional digestion is first that you save on materials and power.

Mr. Sinha.—On steam.

President.—On steam, on materials, particularly caustic soda, you get better quality of pulp which reduces your consumption of bleach, and you also get a larger yield of pulp.

Mr. Sinha.—But that we cannot confirm, but if there is any extra yield, that must be very slight.

President.—How long have you been using this process?

Mr. Sinha.—Four years.

President.—And you are thoroughly satisfied with the result?

Mr. Sinha.—Yes.

President.—Have you got figures regarding the consumption of caustic soda?

Mr. Sinha.—I have not got the figures for grass separately because we use caustic soda for a number of purposes, but in percentage I can tell you right away that in fractional digestion we use 12 to 12½ per cent. of caustic soda on the weight of grass whereas previously we used 15·2 per cent.

President.—There has been a reduction of 3 per cent. calculated on the weight of grass.

Mr. Sinha.—Yes.

President.—What about your consumption of bleaching powder?

Mr. Sinha.—That again is impossible to say. We can only say that we get much whiter pulp than we could get before. The tendency has been for the market to demand whiter and whiter paper.

President.—You are not able to work out even an approximate estimate of the reduction in the consumption?

Mr. Sinha.—I can only give you experimental figures which we had at the time we started.

President.—That is no use. As a result of your four years' experience of fractional digestion what actually under mill conditions has been the improvement you are able to get on the consumption of caustic soda, on the consumption of bleaching powder and on the yield of pulp?

Mr. Sinha.—On the yield of pulp I can't give any definite information, because I haven't got any data for that.

President.—You are not able to get any figures as regards bleaching powder?

Mr. Sinha.—No, we can't give you any figures but we can say very definitely that much less bleaching powder is used for same whiteness of pulp. As the quality of the paper has improved so much, we can't give you comparative figures.

President.—What is the period of your steaming time?

Mr. Sinha.—Now it is about 6 hours.

President.—What was it before?

Mr. Sinha.—10 hours.

President.—You have reduced it from 10 to 6?

Mr. Sinha.—Yes. The first digestion is done under a lower pressure.

President.—When you calculate the period of steaming time, you calculate from the time the boiling point is reached?

Mr. Sinha.—We calculate from the time when we get the pressure.

President.—Because I understand in calculating the steaming time required in fractional digestion, it is possible to calculate it on a different basis, so that we want to get figures which are comparable to those figures

we get elsewhere. The figure of six hours that you gave as the steaming time is calculated from what time?

Mr. Sinha.—From the time when we get the necessary pressure. Supposing I wanted to boil it at 15 lbs. I shall wait until I get the pressure of 15 lbs.

President.—That is not clear to me. Am I right in thinking that generally steaming time is calculated from the time that your water or your solution has reached boiling point, 100° centigrade?

Mr. Sinha.—We don't do that, because we don't measure the temperature of the water. We do not know at what time it starts boiling. Boiling, in fact, depends on pressure.

President.—Tell me precisely how you calculate.

Mr. Sinha.—What we do is this: we reckon from the time we get the pressure at which we would boil the material.

President.—From the moment you get the steam pressure in your digester at which the process of digestion becomes effective?

Mr. Sinha.—Yes, from that time.

President.—In the earlier stages you require a much lower pressure. As soon as you get that minimum low pressure at which the process of digestion becomes effective, at that time your steaming time begins.

Mr. Sinha.—Yes.

President.—And it continues until the whole of the liquid is removed.

Mr. Sinha.—We don't say that the whole of the liquid is removed. We carry it out for 1½ or 2 hours according to the different qualities of grass that we boil. We stop at that. We discharge the liquid and then we go on to the next stage.

President.—How many hours do you take on the first stage?

Mr. Sinha.—Two hours for some qualities of grass.

President.—Normally?

Mr. Sinha.—We take 2 hours.

President.—On the second stage?

Mr. Sinha.—Four hours.

President.—Do you know the average pressure at which the whole process of digestion is carried out? Of course it starts with a low pressure and ends with a higher pressure.

Mr. Sinha.—It is not possible for us to say that. The first digestion is carried out at 10 to 15 lbs.; then we discharge the liquor; wash the grass with hot water. We cannot average it with the second digestion.

Mr. Boag.—What pressure is the second?

Mr. Sinha.—40 to 60 lbs.

President.—It is quite impossible to get an average?

Mr. Sinha.—Yes, for us.

President.—I will tell you why I am asking you this. I have been reading Mr. Raitt's recent book and he gives there the results that he has been able to get as a result of experiments carried out on a semi-commercial scale in 1927. The steaming period that he gives there is 5 hours and the average pressure that he gives is 30 lbs.

Mr. Sinha.—I do not know how he calculates the average.

President.—That is a point we might be able to clear up at Dehra Dun. You have no figures on that point?

Mr. Sinha.—No. I do not know how he averages. If I know his method, I could do it. We never keep a record of our pressures every half hour. It is not possible on an industrial scale. The average can only be arrived at if pressures are recorded every quarter or half an hour, otherwise I do not know how he could do it.

President.—As far as we are aware there is no paper mill in India which has tried under ordinary Indian conditions the method of fractional digestion so long as you have done, that is to say on the scale of your output. They have been doing it to some extent at Raniganj, but only on a very small scale. They are doing it on a different system from the usual fractional system at Kankinara. You are the only people doing it for 4 years so that your results are valuable to us.

Mr. Sinha.—If you will kindly give us time, we will look up our records and give you more definite figures.

President.—Have you got Mr. Raitt's book?

Mr. Sinha.—No.

President.—I will tell you Mr. Raitt's figures which he got in 1927 which he more or less regards as a standard for fractional digestion. I want you to give me figures as approximately as you can for fractional digestion. The consumption of caustic soda is 16 per cent. of bamboo and not grass. As regards bleaching powder, it is 8 to 10 per cent. on unbleached pulp; steaming period is 5 hours and the average pressure is 30 lbs.

Mr. Bhargava.—There are different pressures for different mills.

President.—The yield of unbleached pulp is 45 per cent. If you could give us figures for grass on similar lines, it would be useful.

Mr. Sinha.—I would like to have the book.

President.—You have no soda recovery plant?

Mr. Sinha.—No.

President.—It must be a very large source of waste in the works.

Mr. Sinha.—Yes.

President.—Is soda recovery plant a part of your scheme in connection with the new paper machine?

Mr. Sinha.—Yes as well as the bleach making plant.

Mr. Boag.—Do you apply this fractional digestion system to all your materials or only to grass?

Mr. Sinha.—Only to grass. As the steaming time has been reduced—I mean the actual time of digestion—and as we can wash the grass quicker, we wash it in our boilers—so naturally the capacity of the boiler has been increased, but then again the capacity in another way has been decreased, because we cannot fill in as much as we could in our old system of boiling.

President.—Would you include a statement on that in your note?

Mr. Sinha.—Yes, I will.

Mr. Rahimtoola.—You say the works cost figure has come down by Rs. 200 per ton. In 1924 according to the form given it was 507 and to-day it is 417 and the future figure is 362. From 1924 the drop is only Rs. 90.

Mr. Sinha.—That is a mistake. We meant Rs. 100.

Mr. Rahimtoola.—As regards the china clay, lime, etc., you have given figures. I want to have the figures as to how much per ton you pay for all the auxiliary raw materials delivered at the works. I want to know the exact amounts if you can work it out.

Mr. Sinha.—Shall I send it on?

Mr. Rahimtoola.—Yes, the exact amounts you pay per ton.

Mr. Sinha.—You mean the cost landed at the mills?

Mr. Rahimtoola.—Yes. You say you don't collect raw materials, but that you purchase from contractors. Is that a fixed agreement between the contractor and yourself?

Mr. Bhargava.—We renew it every two years.

Mr. Rahimtoola.—Is there also an annual agreement?

Mr. Bhargava.—Sometimes annual, sometimes biennial.

Mr. Rahimtoola.—How is the price fixed?

Mr. Bhargava.—We invite tenders.

Mr. Rahimtoola.—After inviting tenders you fix a price for grass, hemp and jute?

Mr. Bhargava.—For grass we don't fix any price.

Mr. Rahimtoola.—Do I understand that the price of grass fluctuates according to your consumption?

Mr. Bhargava.—Since the price has fallen, we have not entered into any fresh agreement.

Mr. Rahimtoola.—You said only this year the price has fallen. This practice of yours has been since you manufactured paper from grass?

Mr. Bhargava.—We used to have contracts for about 3 years or so.

Mr. Rahimtoola.—You said you had no contracts.

Mr. Bhargava.—Not recently.

Mr. Rahimtoola.—Since when?

Mr. Bhargava.—Since last year.

Mr. Rahimtoola.—That means the price was fixed year before last.

Mr. Bhargava.—Ycs.

Mr. Rahimtoola.—What was the price?

Mr. Bhargava.—Last year we paid Rs. 2-7.

Mr. Rahimtoola.—That means there was no agreement.

Mr. Bhargava.—We had the contract with one contractor and we purchased grass from other contractors without contract also in the open market.

Mr. Rahimtoola.—I can't follow.

Mr. Bhargava.—Supposing our requirement is 60,000 maunds a year. 20,000 maunds of this we fixed up with a contractor.

Mr. Rahimtoola.—Was it for a fixed price?

Mr. Bhargava.—For more than one year probably 3 years and that contract expired last year. For the balance of our requirements we used to purchase in the open market from whomsoever we get it at a reasonable price.

Mr. Rahimtoola.—As regards question 22 you have said that the three posts occupied by the three European Supervisors referred to above are now filled by Indian apprentices trained in this mill. Were they under a contract system for a fixed period?

Mr. Bhargava.—Yes.

Mr. Rahimtoola.—After the period was over you didn't renew?

Mr. Bhargava.—In the case of 2 we asked then not to continue and one took leave from us and joined the Punjab Paper Mills. He said that his prospects in that mill were better and we allowed him to go.

Mr. Rahimtoola.—At present I take it you have no apprentices in your mill.

Mr. Bhargava.—No fresh apprentices.

Mr. Rahimtoola.—Do you propose to take them in the near future?

Mr. Sinha.—Yes, as soon as the order for the new mill is placed. The number of apprentices who have completed their training is sufficient for us at present.

Mr. Boag.—How many?

Mr. Sinha.—We have got 7. They have completed the course comparatively recently.

Mr. Bhargava.—These apprentices have been kept as Assistants.

Mr. Rahimtoola.—Have you found any difficulty in getting apprentices?

Mr. Bhargava.—No.

Mr. Rahimtoola.—You found that the students were always available?

Mr. Bhargava.—Yes.

Mr. Rahimtoola.—And willing to remain for five years?

Mr. Bhargava.—Gladly willing.

Mr. Rahimtoola.—You have not come across any case in which the student, after joining the mills, has left your service finding that the work is very heavy.

Mr. Bhargava.—No.

Mr. Sinha.—I have not come across any such case.

Mr. Rahimtoola.—Not since you joined the mills?

Mr. Sinha.—Not even before that, I think. Most of the apprentices we have now were recruited before I joined the mill.

President.—The period of apprenticeship is 5 years?

Mr. Sinha.—Yes.

Mr. Boag.—You have taken none on since you came here?

Mr. Sinha.—No. Of course, unpaid apprentices we have taken but not paid apprentices. Shall I explain that point a little further?

Mr. Boag.—Yes.

Mr. Sinha.—We have apprentices whom we took under agreement and whom we pay. We have also unpaid apprentices in the Engineering Department. They are not appointed to any post of an officer straightaway, but they take their chance.

Mr. Bhargava.—They wait until a vacancy occurs.

Mr. Rahimtoola.—But you give them all facilities?

Mr. Sinha.—Yes. Often we give them a minor post say on Rs. 30 or so to enable them to support themselves. It has happened once that with a man who came in as an unpaid apprentice in the Engineering Department we later entered into an agreement and took him on as a paid apprentice. He has now completed his period of apprenticeship.

President.—Coming to Question 25, I do not quite follow how you got your estimate of 80,000 to 100,000 tons as the possible market that you could capture now.

Mr. Sinha.—We don't say now. We only say that it is possible for the Indian mills to do that.

President.—What are the classes of imported paper which this 80,000 to 100,000 tons is supposed to represent?

Mr. Sinha.—All the classes except newsprint. There is no reason why even special papers like the marble paper could not be made here.

President.—The whole of packing paper can be made here. That is your assumption?

Mr. Sinha.—Yes.

President.—I will take the 1929 figures rather than 1930 figures because the 1930 figures represent a period of abnormal depression.

Mr. Sinha.—Yes.

President.—That gives you 14,000 tons.

Mr. Sinha.—Yes.

President.—Newsprint you exclude. You cannot make that here.

Mr. Sinha.—No.

President.—Then there are other sorts of printing paper protected which you think can be made in India.

Mr. Sinha.—Yes, except the very special papers.

President.—For the moment take that as 7,000 tons.

Mr. Sinha.—Yes.

President.—Then, there is the class of not protected printing paper; that is to say printing paper which does not come in as newsprint but is declared to be so by the Customs authorities.

Mr. Sinha.—That should not come in my opinion. If the Customs control were more rigorous, it would not come.

President.—You would include that?

Mr. Sinha.—Yes.

President.—That would be another 7,000 tons.

Mr. Sinha.—Yes.

President.—Then, writing paper is 11,000 tons.

Mr. Sinha.—Yes.

President.—You don't include old newspapers?

Mr. Sinha.—No.

President.—That goes out.

Mr. Sinha.—Quite.

President.—Then, there is a class which is called in the Trade Returns 'other class of paper' which is a very valuable paper costing Rs. 750 per ton.

Mr. Sinha.—That we cannot make at present and possibly not for another ten years or more.

President.—What about paper manufactures?

Mr. Sinha.—We cannot make them.

President.—What about paste boards, card boards and mills boards?

Mr. Sinha.—There is no reason why they cannot be made here.

President.—That is 18,000 tons.

Mr. Sinha.—Yes.

President.—That comes to 57,000 tons. This *plus* the normal increase in consumption as the years go on, is that how you get your 80,000 tons?

Mr. Sinha.—If you add the Indian production to that, it would come to 80,000 to 100,000 tons.

President.—So that you have practically included everything except the newsprint and old newspapers.

Mr. Sinha.—At present there is a mill in Calcutta which makes boards. There is no reason why they cannot be made in India.

President.—In your opinion there is no immediate prospect of bamboo pulp developing an export market?

Mr. Sinha.—In our opinion there is no immediate prospect of the bamboo pulp developing an export market.

President.—For the time being you are against a protective duty on imported pulp.

Mr. Sinha.—Yes.

President.—One reason why you object to a protective duty on imported pulp is that if the price of imported pulp goes up, the price that you have to pay for grass will also go up.

Mr. Sinha.—Yes, and the price of other raw materials will also go up.

President.—You will be a little more dependent on your contractors than you are now if the price of imported pulp goes up.

Mr. Sinha.—Yes.

President.—Is it possible for you (I am on question 29 now) to give us your average realised prices for your white printing, white writing and superior badami papers in 1930? We asked for that information, but you have not given it.

Mr. Sinha.—From the way in which our books are kept, these figures could not be got easily.

President.—I hope you have noted the point that you are going to give me the average freight.

Mr. Sinha.—Yes.

President.—On the method that my colleague suggested. You leave out your Government sales. Take your bazar sales and your total expenditure and divide the latter by the bazar sales.

Mr. Sinha.—Yes.

Mr. Rahimtoola.—I would like to ask you regarding question 23 about the housing of labour. You say that it has not been found necessary. Will you please tell me the reason?

Mr. Sinha.—Because the men don't care to live here. There has never been any demand from these people for quarters for living in the mills area because they live quite close to the mills—within two or three miles—and they have got their relatives and lands there. They don't like to leave those places and come and live in the mills.

Mr. Rahimtoola.—Have you made any proposal to them?

Mr. Sinha.—No, unless there is any demand, why should we? The present arrangements suit us best. If we had the labour colony in our mills or near our mills, there would have been more labour trouble. Assuming that people wanted to come, possibly we would not be able to provide such good homes as they have now in their own lands, near their own relatives. Possibly then we would have more labour trouble.

Mr. Rahimtoola.—Do I understand that you are definitely against providing good housing accommodation for labour on the ground that there will be trouble?

Mr. Sinha.—Not exactly that. We believe that they are happier where they are.

Mr. Bhargava.—We have never investigated that question.

Mr. Rahimtoola.—I don't think that you have taken the trouble to ask whether they would like to live near the mills or not.

Mr. Sinha.—We never asked them en masse. In our mills there are places like chowkidars' quarters. We did ask those people whom we thought important whether they would like to live here for a month or two, but they said they would not.

Mr. Boag.—To ask one or two people whether they would like to live in those quarters is something quite different from providing quarters for your labour as a whole.

Mr. Sinha.—We confess that it is different.

Mr. Rahimtoola.—Have you made any arrangements for a hospital or for rendering first aid?

Mr. Sinha.—We have arrangements to render first aid. We have a wholetime trained compounder. The officer in charge of the Balarampur Hospital and the Civil Surgeon are our medical advisers.

Mr. Rahimtoola.—I would like to draw your attention regarding the duty on wood pulp. You are I gather definitely opposed to it.

Mr. Sinha.—Yes.

Mr. Rahimtoola.—You know the conditions laid down by the Indian Fiscal Commission, namely that sufficient quantity of raw material should be available in the country for an industry to qualify for protection.

Mr. Sinha.—Yes.

Mr. Rahimtoola.—You know that in their report of 1925 the Tariff Board have absolutely ruled out grass.

Mr. Sinha.—Yes.

Mr. Rahimtoola.—They have ruled out grass as a raw material for protection and they have given protection for a period of five years for exploiting bamboo as a raw material for paper.

Mr. Sinha.—Yes.

Mr. Rahimtoola.—At present I find that you are not aware of the price of bamboo pulp. If you were aware you will find that the wood pulp prices

are so low that the bamboo pulp cannot be used without protection. If such a state did exist, then you would recommend a duty on wood pulp.

Mr. Sinha.—I would not, because by the time bamboo pulp is well established in this country, possibly the existing paper industry will go to pieces. Then we will have to start over again.

Mr. Rahimtoola.—How could an industry demand protection if it is not in a position to obtain its principal raw material from the country.

President.—With regard to my colleague's suggestion: if you want to encourage the use of bamboo pulp, you must make the price of bamboo pulp in this country such that it is worth the while of manufacturers to make it in competition with wood pulp.

Mr. Sinha.—Yes, ultimately.

President.—It is for that purpose that a duty on imported pulp has been suggested. Your reply to that is that if the price of wood pulp goes up in consequence of this duty, then the price not merely of wood pulp but also other primary materials will go up in the country. Therefore the costs of paper manufacturers will go up and therefore they will find it impossible to compete.

Mr. Sinha.—Quite right.

President.—If along with a duty on imported pulp there is a corresponding duty on finished paper, the position would be remedied from your point of view.

Mr. Sinha.—Yes, but from the point of view of the consumer it would be a burden.

President.—From that point of view you would still object?

Mr. Sinha.—Yes.

Mr. Rahimtoola.—So, you now object from the point of view of consumer.

Mr. Sinha.—We would not object if the duty on paper was correspondingly raised. But from the point of view of the consumer it is objectionable.

Mr. Rahimtoola.—According to you it amounts to this that to-day the industry will not be able to make use of its primary raw material.

Mr. Sinha.—You mean the bamboo?

Mr. Rahimtoola.—The bamboo pulp, which is indirectly the primary material.

Mr. Sinha.—They are using it, but it will take time before that industry is firmly established.

Mr. Rahimtoola.—Till that time, the industry is not in a position to qualify for protection.

Mr. Sinha.—Very likely then there will be no question of protection. Our point is that there must be a paper industry existing. That is the best possible condition for the growth of a pulp industry. If a paper industry was at the door, then the pulp industry could grow because it would have a ready market. But if there was no such ready market, we would have to start over again with the paper industry here or try and supply to the outside market.

Mr. Rahimtoola.—That is why I drew your attention to the condition of the Fiscal Commission which lays down that unless an industry is able to make use of its principal raw material, the industry cannot get protection.

Mr. Sinha.—It is not a question of a raw material being found in abundance, the raw material is already there. It is a question of establishing an industry. If we could do that straightaway, we would not come to you begging for protection.

Mr. Rahimtoola.—You know according to the Tariff Board's report of 1925 the industry can only get protection if bamboo is used.

Mr. Sinha.—It is being used.

Mr. Rahimtoola.—It cannot be used on a commercial scale because it is not a paying proposition as against the price of wood pulp to-day.

Mr. Sinha.—I thought that it was being used. Supposing that were so and there were no prospects, why should the Titaghur Paper Mills use it?

Mr. Rahimtoola.—The Titaghur Paper Mills are using bamboo pulp because they want to qualify for protection. If no mill was using this kind of pulp the question of protection would not arise. Therefore if you are against a duty on wood pulp which means making bamboo pulp unsaleable, the chances of protection are very meagre.

Mr. Sinha.—I am afraid I have not been able to make our point of view quite clear.

Mr. Rahimtoola.—Your Director has I think understood it.

President.—The best protection that can be afforded to the bamboo pulp is to develop in this country a good efficient paper industry—is that your point?

Mr. Sinha.—Quite so.

Mr. Boag.—You say that you cannot give us your average price realised for writing and printing paper. Can you explain to us how you fix the price at which you sell your paper?

Mr. Bhargava.—By market conditions.

Mr. Boag.—Not by the cost of manufacture?

Mr. Bhargava.—We have to see to that also.

Mr. Boag.—Which is the principal factor?

Mr. Bhargava.—The market is the principal factor. Supposing we are selling at 4 annas and we find that other mills are selling at 3 annas a lb., we have to come down to that level.

President.—I don't know if I have grasped the suggestion that you make about newsprint. Am I to understand from the reply your position amounts to this: You are not so much against the particular percentage of mechanical wood pulp on which the present test is based. What you are against is really the uncertainty of the results which have followed the actual working out of these tests. Is that correct?

Mr. Sinha.—That is so. What we want is that the test should give consistent results. Supposing the percentage comes to 70 or 75 per cent., then it can be put at 70 or 75 per cent.

President.—That is to say if you fix 65 or 70 per cent. as the limit of mechanical pulp in newsprint for Customs purposes the test adopted must be such that both the man who imports into this country and the manufacturer who exports it from the country of origin, both parties must know precisely that the test should yield the same result.

Mr. Sinha.—Quite right.

President.—You know newsprint is imported into this country from five or six different countries and these different countries have different tests for the determination of newsprint.

Mr. Sinha.—Yes, possibly.

President.—If your suggestion is to be carried out effectively it must necessarily imply that the Government of India would have to attempt an international conference of paper manufacturers for the purpose of determining first the best kind of test for newsprint, and secondly the most satisfactory kind of percentage to be fixed.

Mr. Sinha.—I don't think they need go as far as that.

President.—You have got the three Scandinavian countries, you have got Czecho-Slovakia, you have got Austria, and all these countries must adopt a test besides the Government of India, and unless that is done the difficulties will re-appear.

Mr. Sinha.—What is really wanted is a test which would yield consistent results. Supposing that is done even with reference to one European country,

so long as the test yields consistent results, that is sufficient. Why should reference be made to all countries?

President.—I will give you a concrete instance. We lay down that 65 per cent. of the fibre content is the minimum for wood free paper. We adopt here a test which conforms to the test generally accepted in Scandinavian countries, so that as far as Scandinavia and the Government of India are concerned there probably would be very little trouble. Now supposing into the market there comes an export from Czecho-Slovakia, which also sends paper into this country, based on this 65 per cent. but with a slightly different test for determining the quantity of wood pulp and it yields a different result, won't you have the whole crop of trouble over again?

Mr. Sinha.—That is exactly the thing we wanted to avoid by this suggestion. If the test which the Government of India have adopted here is also in vogue in Scandinavian countries so far so good, but then it should be the look out of the customers to assure that papers from other countries were also submitted to those tests which would yield the same results and would be checked by similar tests carried out here.

President.—I don't accept that view at all. I will tell you why. For the past two years the Customs Department here have been basing their assessment on a perfectly well known test in which not merely the kind of fibre but also the relative density of the fibre is taken into account. The Customs people have announced to the importers the nature of the test and the way in which it is worked out. Is there really any reason why people who export from other countries newsprint into this country should not accept this test and should not base their content of mechanical wood pulp on the test adopted by the Customs authorities in India? But they have not done it.

Mr. Sinha.—There is no reason why they should not do it.

President.—If there is a particular test which the Customs Department here has adopted and the nature of that test and the way in which it is worked out are perfectly well known facts, there is nothing more to be said.

Mr. Sinha.—Yes, if they are as you say. But there have been many complaints.

Mr. Boag.—Have there been any complaints during the last two years?

Mr. Sinha.—Not that we know of.

President.—We have heard that apparently the number of disputable cases have been very considerably reduced since the new method was adopted about two years ago, so that if that is the position then there is nothing in the suggestion that you make.

Mr. Sinha.—If we are certain of these tests then these complaints have no value.

President.—Any way you are not basing your complaint on the fact that you have suffered in any way on account of the test, are you?

Mr. Sinha.—We really do not know. When I see this 6,000 to 8,000 tons of paper I am not so sure.

President.—It is not a complaint about which you have felt so strongly, otherwise it would have appeared in your replies?

Mr. Sinha.—Not very much.

President.—Let us take your reply to question 42. These figures that you give in 42 (a) and (b) do they represent the present replacement cost?

Mr. Sinha.—Yes.

President.—What is the sort of output that you would get on a paper plant purchased and erected at this cost?

Mr. Sinha.—The same as we are getting now, 3,000 tons.

President.—The two figures together—plant and building—give you Rs. 23 lakhs and your present output of paper is 3,500 tons?

Mr. Sinha.—Yes.

President.—If you expended Rs. 23 lakhs to-day you could erect a paper mill exactly like yours with this capacity?

Mr. Sinha.—Not exactly like ours but with that capacity. It includes everything.

President.—That works out to an average capitalization of Rs. 650 per ton of paper. Would you consider that a fair capitalization?

Mr. Sinha.—Yes.

President.—On what data did you base these calculations?

Mr. Sinha.—On certain quotations we got.

President.—The figure that the Tariff Board took in 1925 was 800 rupees per ton of paper.

Mr. Sinha.—It has gone down since.

President.—Was this worked out in any detail?

Mr. Sinha.—For the machinery we got actual quotations; to that we added on erection charges.

President.—Would you mind sending us a note giving us the data on which you worked this out?

Mr. Sinha.—Yes. Building we have not estimated on plants but, on the basis of the existing buildings we have got, we have roughly estimated, but as regards machinery that is fairly certain.

President.—Make that statement as detailed as you can.

Mr. Sinha.—In that case it would be better if we wait till we get the quotations by mail possibly within a couple of weeks.

President.—We should like to have them before the end of August.

Mr. Sinha.—We shall be able to give you before that time.

President.—You don't yourself attach very much importance to your estimate of cost of pulp?

Mr. Sinha.—No, we don't.

President.—You are not very serious when you suggest in answer to question 52 that you are interested in the Cuttack project?

Mr. Bhargava.—Yes, we are interested either as purchaser of pulp or as participant in the concern.

President.—You mean getting your pulp from Cuttack to Lucknow?

Mr. Bhargava.—Yes.

President.—What is the distance from Cuttack to Lucknow? Assuming that the freight on pulp is going to be the same as on paper, do you think you can really afford?

Mr. Bhargava.—It may be only 10 per cent. more. It will be unbleached pulp. We are quite serious about that. If the pulp industry develops as the Titaghur people give us to understand that it would, there is no reason why we should not combine with them and have a pulp mill at Cuttack.

President.—Has there been any kind of correspondence about it?

Mr. Bhargava.—No, but informal talks.

Mr. Rahimtoola.—As regards question 35, have you seen bamboo paper?

Mr. Sinha.—I have.

Mr. Rahimtoola.—You have also seen the market rates?

Mr. Sinha.—Yes.

Mr. Rahimtoola.—Have you tried to test that paper?

Mr. Sinha.—I have had samples of paper with 100 per cent. bamboo and also with about 40 per cent. bamboo.

Mr. Rahimtoola.—What percentage of bamboo do you mean here when you say "as the bamboo paper came into the market only recently, as compared with the grass paper, it has still to establish itself firmly in the market and for that reason a certain amount of concession in price is allowed to the customers".

Mr. Sinha.—We are referring to the Naihati mill; some of their prices are fixed a little lower than those of other mills—about a pie lower.

Mr. Rahimtoola.—Have you carefully examined that paper?

Mr. Sinha.—I have done it under a microscope.

Mr. Rahimtoola.—I cannot exactly follow the test for the imported papers you want to lay down. Do I understand that the countries which export paper into India should carry out the same test which the Government of India adopt in this country at the part of entry?

Mr. Sinha.—Yes. Very often a certificate of test accompanies an importation. If that certificate were based on test prescribed by the Government of India it is more likely that the tests carried out here will conform to the results obtained by them.

Mr. Rahimtoola.—You would like the Government of India to negotiate with other Governments.

Mr. Sinha.—If it may be put down that if a certain consignment of paper satisfy the Government of India tests for mechanical wood pulp content, then it would be imported with ordinary import duty.

Mr. Rahimtoola.—It comes to this that unless other countries adopt the same tests as the Government of India, the paper should be prohibited from coming into India.

Mr. Sinha.—If they send, the paper would be subjected to the test.

Mr. Rahimtoola.—You want to dictate to other Governments that they should carry out the tests which the Government of India have adopted for this country.

Mr. Sinha.—In the Act it may be laid down that the Government of India test is the valid one.

Mr. Rahimtoola.—Our Chairman has already pointed out to you that there are different tests laid down in different countries. You want that all those countries which are importing paper into India should lay down the same tests which the Government of India are laying down.

Mr. Sinha.—It happens in many cases that a particular test is considered valid for a specific purpose.

President.—The point really is this. The Government of India lay down that any paper which contains not less than 65 per cent. of mechanical wood pulp as compared with its fibre content is newsprint and therefore imported at a revenue duty but the Government of India, according to your suggestion, will have to say that this contains 65 per cent. and this 65 per cent. is calculated by the adoption of this particular test so that everybody who imports paper into this country knows beforehand both the percentage adopted and the particular way in which that percentage is calculated.

Mr. Sinha.—Yes.

Mr. Rahimtoola.—That percentage is already known.

Mr. Sinha.—It is very difficult to know from the furnish the exact percentages of the actual contents of paper. It is easier to find these out from the tests. We furnish into the beaters so many things. As you have seen this morning the wet pulp is carried in carts and emptied into the beaters. Supposing sometime a certain pulp carries more water than is usual, the percentages of the constituents of the resulting paper will then vary. In actual practice it is very difficult to keep to exact percentage. As we find ourselves it is very difficult to manufacture within one or two per cent. Supposing there is more water in a particular halfstuff the proportion will be upset.

Mr. Rahimtoola.—In question 41, statement (G) you say "Other assets". May I know what exactly 'Other assets' mean?

Mr. Bhargava.—Stocks and stores, investment in war bonds.

Mr. Sinha.—We have submitted balance sheets. If you will refer to them you will find the details.

President.—Most of it is investment in war bonds.

Mr. Bhargava.—Besides land, buildings.

Mr. Rahimtoola.—In answer to question 52, on page 12 you say “ though the Tariff Board in their last enquiry have ignored the claims of other raw materials we use, namely, the rags and hemp, we respectfully submit that they deserve consideration ”. Is it your opinion that these raw materials should also get protection?

Mr. Sinha.—In our opinion, yes, because we are in bad times. There is quite a good quantity of raw materials available in the country. A good industry could be established with the help of rags.

Mr. Rahimtoola.—At present there is indirect protection to all materials used for the manufacture of paper.

Mr. Sinha.—Not by Bamboo Paper Industry Protection Act; not on that basis.

Mr. Rahimtoola.—Your point is that the title of the Act as passed in 1925 should be changed.

Mr. Sinha.—Whether it is changed or not, we request that our position should be considered.

President.—From a practical point of view it doesn't make any difference.

Mr. Sinha.—No, but it affects our position as a going business concern. Last time we were not thought deserving of much consideration. We are using 90 per cent. of the Indian raw materials. Our staff is Indianised. We are selling our products. We are improving and expanding. Though we are not making as much whites as some of the other mills do, still we hope to do it within a short time. Then our position will further improve. We are absolutely sanguine about that. Why should we not have the same consideration as some of the other mills are having? That is our position.

Mr. Boag.—In answer to question 39 you say you have spent Rs. 38,000 in addition to Rs. 4,07,386 on the new power and steam plants. What is the total cost of your new power and steam plant?

Mr. Bhargava.—That is Rs. 4 lakhs.

Mr. Sinha.—That is the new power and steam plant and also motors and cables for electrification of our present mills. That is not a complete figure. There is more to come yet.

Mr. Boag.—What is the estimate of these additional expenses.

Mr. Bhargava.—About Rs. 4½ lakhs.

Mr. Boag.—Of which you have spent Rs. 4,07,386 and another Rs. 42,000 has to be spent

Mr. Bhargava.—Yes.

Mr. Boag.—In answer to question 40 you say “ You have decided to carry out a scheme of extension including the erection of a modern paper making machine with all the auxiliary plants and so on ”. What do you estimate that would cost you?

Mr. Sinha.—Unless we get the full quotation, we can't give you an exact figure, but it will be close on Rs. 20 lakhs including erection, building and everything.

The Deccan Paper Mills Co., Ltd., Bombay.

A.—WRITTEN.

(1) *Letter No. D. 14-353, dated the 30th April, 1931.*

With reference to the Press communiqué issued by the Government of India, referring the question of the continuance of the protective duties imposed under the Bamboo Paper Industry (Protection) Act, 1925, and how far the Act has achieved its purpose, and calling upon firms or persons interested in paper making industry, who desire that their views should be considered by the Tariff Board, to address their representation to the Secretary of the Board, we hereby submit our views thereon. The duties imposed under the Act of 1925 will expire on 31st March 1932, and the Tariff Board is to hold an enquiry in order to ascertain how far the Act has achieved its purpose, and whether the continuance of protective measures beyond that date is desirable.

2. The principles underlying the question have been threshed out with such fulness of detail in the Report of 1925, that it is superfluous to go into them at the present stage. But as the point is one that affects vitally a paper industrial concern like ours, in common with others in India, we crave leave to submit our hopes that the investigation, that will take place, will take into account the facts and arguments that Indian Paper Manufacturers may have to submit in support of the continuance of the protective duties, with such adjustment thereof, as may be deemed suitable to the facts and circumstances that have evolved during the past quinquennium.

3. The object of the duties has been to help the development of the Bamboo Pulp and Paper Industries, and, as a corollary thereof, to keep the Indian paper mills in existence, for, in the words of the Tariff Board, "if they remain in existence until the time comes when the intensive development of the Bamboo Paper and Pulp industries is likely to be profitable, one advantage at any rate will be secured. The immediate shutting down of the mills would mean the dispersal of the workmen, who have been trained during the last forty years, and the bamboo mills would have to train their workmen from the start".

4. How far the object has been gained will be readily appreciated from the following facts:—

If we take the figures for the year 1929-30, and take into consideration that the Indian Mills produced during this year approximately 39,000 tons of paper, which at the corresponding European c.i.f. prices, *plus* cost and 15 per cent. Customs Tariff, would be valued at about 1 crore and 60 lakhs of rupees, and that the mills imported pulp which amounted to 24,300 tons of the value of 45 lakhs, it will be easy to see what protection has done for India in this instance. Whereas India produced paper in 1929-30 worth a crore and 60 lakhs, it paid thereout 45 lakhs for foreign pulp, that is, protection was responsible for preventing at least a crore of rupees being drained out of India during that year, even after allowing for the amount spent on other foreign stores.

5. Moreover taking note of the fact that the average yearly production of the Indian Mills during the normal period,—1911-14 was 27,248 tons (p. 107, Tariff Board Report) and was only 25,189 tons during the 3 years 1922-24, i.e., those immediately before protection was granted, it will be further realised that protection has helped India also to increase its production by as much as 11,700 to 14,800 tons a year, as compared with the average of the 3 normal years preceding the war, or the 3 years immediately before protection was granted, a remarkable expansion of about 40 to 50 per cent. There is no instance of any other industry which has shown such an increase in so short a time, and during a period too, when depression in trade was world wide and acute. With all, it is remarkable that side by side with the increase of production the quality of the product has not only been

maintained but has steadfastly improved, so that to-day it is surpassed by none of the imported products, price to price.

6. With regard to the burden of protection on the consumer, we would state that when the facts are taken into consideration that of the total imports during 1929-30 only 20,000 tons were of the protected variety, and that too included an appreciable quantity of the expensive papers not affected seriously, or not at all, by the higher duty, and that the prices of the Indian-made papers are about 2 pies per lb. less than the corresponding imported varieties, and a good deal less in several instances, and that 12 per cent. of their total make are of the unprotected varieties, and further that a considerable quantity of their wood-free paper, known as Unbleached or Badamis, is being consumed at prices which are considerably lower than any wood-free paper of foreign make, the burden of protection in all these circumstances is but very moderate to say the least. As a matter of fact, instead of the prices being raised as might have been expected, the consumer has saved nearly forty lakhs on supplies in 1929-30 as compared with pre-tariff period prices. Therefore, for a comparatively small sacrifice out of which, after all, a greater part goes to the revenue to help unfavourable budget which otherwise must have to provide for a like sum by some other means, educated India has helped not only to keep the industry in existence, and to provide employment for at least 6,000 skilled and unskilled workmen within the mills (Statistical Abstract for British India, 1930, p. 659) and several thousands without, for the collection of grasses, bamboos, rags, waste materials, etc., and to prevent the annihilation of nearly a crore of rupees of capital involved in this industry, but it has helped to expand the industry as much as 40 to 50 per cent., has helped to vastly improve the quality of its product, and has prevented a drain of no less than a crore of rupees abroad. Anent this we beg to quote the following lines from the Tariff Board Report (page 104), issued in 1925: "For our own part we feel strongly that the disappearance of the industry at a moment when the use of bamboos opens up fresh avenues of development in the future would be very regrettable, and we believe that the proposals we have made are in accordance with the national interest". And the results have more than justified the Board's expectation.

7. Our own Mill, which was started on a single machine mill in 1885, and commenced production in 1887, has had to pass through various vicissitudes, and had to cease operation in 1924, owing to the depressed condition of the trade. Then came the Protective Act, and a great effort was made to take advantage of the fact by increasing the capital of the Company, and running it as a 3 machine concern, as it now is. Besides the cost of a brand new machine imported from Europe with the latest refinements and improvements which was originally intended for the Bombay Mills, but has since been erected at our Poona Mills, we have spent during the years 1924-31 about Rs. 96,000 on machinery and erection, and Rs. 16,700 on buildings. The accompanying table will show our progress made from 1924-25 to 1930-31. A very gradual rise in production is perceptible from a little over 3 lakhs in 1924-25 to nearly 10 lakhs in 1930-31. But although the rise is in the main due to the help given by protection, it has not been accompanied by corresponding large profits, as is evidenced by the balance sheets, which although showing certain profits, have precluded the declaration of any dividend for the past five years, as the profits have been locked up in the improvements and additions made to the machinery and buildings, and in the increased outstandings, and stocks of raw materials and paper, consequent upon increased production. As the production has increased, our consumption of pulp has also increased. It amounted to about 1,160 tons in 1930-31, and we expect it to be much more when the machines are run at their maximum output. It will be thus seen that we are quite ripe to use bamboo pulp whenever it becomes available.

8. With regard to the development of the bamboo pulp and paper industries in India, we regret our mills are so situated as not to enable us to make pulp from bamboo economically. We are, however, in close touch with developments in this industry, and are naturally greatly interested in the pulp and paper made from bamboo by the Calcutta mills. Judging from the

results which have been achieved with the continued efforts of Government and of the Mills, with the aid of persistent research work, we have no doubt that bamboo is on the threshold of becoming a universal raw material for paper and allied products. We are co-operating closely with the Calcutta Mills, and as indicated above are ready to use bamboo pulp whenever available, as the results obtained so far by the Calcutta Mills have been found to be highly satisfactory. We respectfully suggest that the only sound method of developing Indian bamboo for pulp and paper is primarily to support the paper industry in this country, thereby establishing confidence in the existing concerns, and in the promotion of new schemes, which will result in stimulating the immediate employment of bamboo pulp whenever it is available. It is inconceivable to think that Government will lend themselves to a policy of assisting the bamboo pulp industry not for the benefit of Indian consumption but for export for foreign exploiters, especially in view of the probability in the near future of a great increase in the local demand for pulp, which has gone up considerably since 1924, having reached the figure of 24,300 tons during the year 1929-30.

9. Although vast developments have been made, thanks to protection, during the past 5 years in the method of treatment of bamboo for pulp, and practical difficulties have been successfully solved, the development of bamboo as the raw product of India for pulp is yet in a stage of infancy, and considerable fostering will have to be done before bamboo can hold its own against the woodpulp of Canada and North Europe, which eventually it will do, particularly in view of the threatened exhaustion of the wood supplies of Europe and America. In the meantime it is a vital necessity that if the pulp and paper industry in India is to exist at all, it must have a few years of fostering care, and that, in order to develop and retain the market for Indian made paper which consumes nearly 2 crores annually, we consider it is highly necessary to encourage Indian Mills, until bamboo comes into its own, and creates for itself a world market, as has been prophesied for it.

10. The paper industry naturally advocates a line of policy which promotes its own well being. But from the administrative point there is the larger view of the well being of the nation. From this standard it is right not only to secure for a country those products which cannot be produced in the importing country, but incidentally to levy duty, the object of which is to secure national revenue. There are certain articles, however, which a country can produce, and their primary object is to secure home production and employment. In this latter class falls the paper industry of India. With the spectre of unemployment stalking the world over, against which every organised country in the world is making a dead set, one has to adopt a policy which will encourage industries, and thus contribute towards the elimination of unemployment, and the creation of a busy and contented people. This is the crux of the policy of protection, and as such it has been intensively practised in Europe as well as in America. The late President McKinley has said "Nothing is cheap which enforces idleness on a people".

11. The facts and reasons we have adduced above will make it clear that the protective duty has had a distinctly beneficial effect on paper industry in India. The only argument that can possibly be urged against the duty is whether it is in the interest of the consumer to take it off. That such an argument is fallacious is proved by the success of protective duty in other countries. A striking instance is the case of dye-stuffs in Great Britain. In 1913 Germany made 83 per cent. of the world's total production of dye-stuffs, and Great Britain took 90 per cent. of its requirements from abroad. In 1923 as a result of war and Government action, Great Britain created a dye-stuff industry which supplied 80 per cent. of the local needs,—the quality of the product being quite as good as the imported product. (British Dye-Stuffs Corporation Address in London, October 1923.) And according to the figures published by the "Morning Post" in 1924, these results were accompanied by a great reduction in the price of dyes. Thus encouragement of manufacture on a large scale, together with a general dropping of prices are the inevitable results of protective duties judiciously imposed.

12. In Australia the question to what extent, if at all, she should modify her present policy of high protection is a burning question, and the answer given conclusively is that the course should be followed of raising the protective barrier still higher. This has been the tendency during recent years, and there are signs that it may become even more marked in future (The Prosperity of Australia, an Economic Analysis, by Frederick C. Benham, Ph.D., 2nd Edition, p. 224). The present economic world conditions makes this policy a *sine qua non*, and instances from other countries could be multiplied extensively.

13. That protection in India has had beneficial results is noticed outside India also. Thus the World's Paper Trade Review (26th July 1929), has it that under the protection now granted, and with the help of research work carried out at Dehra Dun, the Indian industry is showing signs of revival. The imports of paper mill machinery are increasing, the imports in 1928-29 amounting to Rs. 35 lakhs.

14. Thus arguments could be multiplied in favour of the policy of protection so widely inaugurated by Government, but we trust that the general arguments in its favour briefly indicated here will suffice for the present. The question of protection has assumed such vast importance in those days, that detailed facts and statistics in support of protection to the paper industry can be gone into, if necessary, and we request that when the Board's programme of the investigation of the question in its present stage is fully developed, and a set of questionnaire, if any, is laid down, we may be given an opportunity to have our say on these and other points that might arise.

15. In the meantime we respectfully beg to propose the continuance of the present duty, which should be made applicable to all papers, unless specifically exempted, with a surcharge on Printings and Writings amounting to 30 per cent. on the present duty making a total of Rs. 183. The executive may be empowered to reduce or alter the surcharge, or even the duty itself, if the price of wood pulp rises, and also to transfer descriptions from the exempted to the taxed list.

16. We further beg to point out that considerable quantities of paper are now being imported as cheap substitutes for Indian made paper owing to the figure of the mechanical pulp content of the duty-free paper having been fixed too low. As this should be stopped both in the interest of the consumer as well as the mills, we suggest that the definition of "newsprint" should apply to paper which contains not less than 75 per cent. mechanical pulp, but other qualities for legitimate newspaper requirements may be admitted under license.

Enclosure.

Table of Production.

Year.									Production in Value.
									Rs.
1924-25	-	.	.	.	.	.	.	.	3,13,665
1925-26	.	.	.	.	.	.	.	.	4,40,910
1926-27	.	.	.	.	.	.	.	.	4,50,990
1927-28	.	.	.	.	.	.	.	.	5,25,340
1928-29	.	.	.	.	.	.	.	.	7,59,770
1929-30	.	.	.	.	.	.	.	.	8,48,548
1930-31	.	.	.	.	.	.	.	.	10,00,000
									(approximately).

(2) *Letter dated the 6th July, 1931, from the Deccan Paper Mills Company, Limited.*

We have the honour to forward herewith answers to the questionnaire for manufacturers sent to us by your letter No. 258, dated 30th May, 1931, together with 5 spare copies as asked for.

2. We trust the replies will furnish the information required and if any further information be necessary, we shall be happy to supply the same, so far as it may be in our power to do so.

Enclosure.

1. (a) Our concern is a public registered Company.

(b) The Company is registered in India with rupee capital.

(c) The shareholders of the Company are Indians, excepting 3 who are Europeans who hold 14 shares out of a total of 1,850 shares.

The proportion of Indian shareholders to Europeans is as 419 to 3, and the proportion of shares held by Indians and Europeans is as 1,836: 14. That is to say, 99.28 per cent. are Indian shareholders, and the shares held by them represent 99.24 per cent. of the total.

(d) The Directorate is wholly Indian, and the superior management of the Company is entirely in Indian hands. The changes that have occurred in the constitution of our Company may be summarised as follows:—

In the year 1924 our Company took over the Pudumjee Paper Mills, Bombay, from Messrs. D. Pudumjee & Co., on allotting them 850 fully paid up shares of the total value of Rs. 4,25,000, this being the actual cost of the mill as ascertained from their books on the date of purchase, including a brand new paper machine which they had just then imported, and which they originally intended to erect at their Mills in Bombay. This machine which cost nearly Rs. 1,09,000 has since been erected at our Mundhwa Mills, Poona. The share capital of our Company which was originally Rs. 5,00,000, has therefore been increased to Rs. 9,25,000.

2. The capacity of our two Mills as at present equipped is about 4,000 tons per annum. The total capacity of our 3 machines, however, is about 5,700 tons.

3. The actual output of paper of our Mills for each year since 1924-25 has been as follows:—

	Tons.
1924-25	876.6
1925-26	944.8
1926-27	1,109.1
1927-28	1,251.2
1928-29	1,391
1929-30	2,123.9
1930-31	2,290.4

No pulp from grasses or bamboo is made in our Mills.

4. The chief classes of Paper manufactured in our Mills are ledger and writings; white, coloured, and antique printing; Badamis; and Brown and coloured wrappings.

The average percentage of the total output which each represents is as follows:—

	During 1924-25 & 1925-26.	During 1929-30 & 1930-31.
Writings	2.25	2.2
Printings	9.3	25.2
Superior Badami	3	10.2
Ordinary Badami	45.5	49.3
Wrappings	45.65	13.1

5. Our annual consumption of primary materials, since 1924-25, is as follows:—

	Tons.
Pulp—	
1924-25	105
1925-26	123
1926-27	200
1927-28	198
1928-29	378
1929-30	740
1930-31	1,160
	<hr/> 2,904

Rags, gunny, etc.—

1924-25	16
1925-26	105
1926-27	135
1927-28	272
1928-29	205
1929-30	396
	<hr/> 1,123

White shavings, letters, records and various kinds of waste paper—

1924-25	1,147
1925-26	1,182
1926-27	1,269
1927-28	1,330
1928-29	1,419
1929-30	1,775
	<hr/> 8,122

6. The quantity of each of the primary materials required for one ton of paper, according to our estimate is as follows:—

Rags.—On the average 2 tons per ton of finished paper.

Hemp and gunny.—On the average 2 tons per ton of finished paper.

White Shavings, Letters, buffs, manillas, Krafts, etc.—1.4 to 1.6 tons per ton of finished paper.

Chemical Pulp.—1.18 tons per ton of finished paper.

7. We have no particular reason to vary substantially our opinion as expressed at the last Tariff Board Enquiry, regarding the total quantities available of our primary materials and their suitability for the manufacture of paper. During the period after the enquiry we have considerably extended our supplies and the use of white paper shavings or cuttings, letters and old records, and waste paper of various kinds.

8. There has been no substantial change since 1923-24 as regards the sources from which our primary materials are drawn, excepting in the case of white paper shavings or cuttings of which since the last two years we have drawn about 80 tons per year from Madras and about 100 tons per year from Nasik (from the Security Press), and old records from the B., B. & C. I. and G. I. P. Railways, and from Secunderabad from the Nizam's Guaranteed State Railway.

Almost all our primary materials are supplied by our Contractors and transported by rail in hand-pressed bales.

9. The cost per ton of primary materials, delivered at our Mills is as follows:—

Kind of material.	1924-25.		1925-26.		1926-27.	
	Cost.	Average Cost.	Cost.	Average Cost.	Cost.	Average Cost.
	Rs.	Ks.	Rs.	Rs.	Rs.	Rs.
Rags, etc. . . .	30 to 60	51	30 to 60	51	30 to 65	52
Old Gunny, etc. . . .	...	...	...	...	...	...
White shavings, letters and various kinds of waste paper.	25 to 100	41.1	25 to 100	44.5	25 to 100	50.6

Kind of material.	1927-28.		1928-29.		1929-30	
	Cost.	Average Cost.	Cost.	Average Cost.	Cost.	Average Cost.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Rags, etc.	30 to 55	46	30 to 70	53	30 to 100	62
Old gunny, etc. . . .	25 to 55	49	20 to 55	48	20 to 60	50
White shavings, letters and various kinds of waste paper.	25 to 144	54.5	25 to 140	56.8	25 to 140	61.2

The Railway freight on rags and gunny from Bombay to Hadapsar is Rs. 45 per wagon or about Rs. 7-12 per ton.

The Railway freight on waste paper is As. 4-11 per maund or Rs. 8-5-8 per ton.

The cost of cartage from Hadapsar to our Mills is about As. 4 per ton.

10. The present rates of Railway freight on primary and other materials used in our Poona Mills, as compared with those current before War, have

caused considerable hardship to our industry, as will be seen from the figures given below:—

Materials.	Railway freight during 1913-14 per ton.	Railway freight during 1930-31 per ton.	Increase in freight per ton.	Total consumption during 1930-31 (in Tons).	Extra cost involved during 1930-31 owing to increase in Railway freight.
	Rs. A. P.	Rs. A. P.	Rs. A. P.		Rs. A. P.
Imported pulp	2 13 0	8 5 8	5 8 8	1,114	6,173 6 8
Bags, Jute and Gunny	5 0 0	7 12 0	2 12 0	351.5	966 10 0
French Chalk and China Clay.	7 8 0	8 5 8	1 2 8	31.0	36 2 8
Sulphate of Alumina and Rosin.	7 3 0	8 5 8	1 2 8	190.0	221 10 8
				Total Rs.	7,397 14 0

11. We regret our Mills are so situated as not to enable us to make pulp from bamboo economically, and therefore no development of the production of bamboo pulp has been possible in our Mills, but as potential users of bamboo pulp we are prepared to take it to the extent of 1,500 to 2,000 tons, and over per annum whenever it becomes available.

12. The quantity of foreign pulp imported by us during each year since 1924-25 is as follows:—

Year.	Kind of Pulp.	Quantity imported.	Country from where imported.	Rate per ton c. i. f. Bombay varying from to.	Larding charges etc., per ton.	Transport charges to Mills per ton.
		Tons.		£ £	Rs. A.	Rs. A.
1924-25	Bleached Sulphite	5.0	Sweden & Norway.	16-3-0 to 20-10-0	6 2	8 10
	Unbleached "	60.0	Do	15-5-0	6 2	8 10
1925-26	Bleached "	85.5	Do	18-15-0 to 21-10-0	6 2	8 10
	Unbleached "	107.1	Do	15-5-0	6 2	8 10
1926-27	Bleached "	166.2	Do	18-10-0 to 19-0-0	5 5	8 10
	Unbleached "	87.3	Do	14-8-0 to 15-10-0	5 5	8 10
1927-28	Bleached "	89.6	Sweden & Finland.	18-10-0 to 19-0-0	5 5	8 10
	Unbleached "	91.4	Do	11-5-0 to 14-4-8	5 5	8 10
1928-29	Bleached "	165.15	Sweden, Norway & Finland.	18-0-0 to 19-0 0	5 5	8 10
	Soda Bleached Sulphite.	52.75	Do	17-0-0 to 17-10-0	5 5	8 10
	Unbleached Sulphite	267.2	Do	11-5-0 to 13-15-0	5 5	8 10
1929-30	Bleached "	513.2	Sweden, Norway, Finland & Germany.	16-17-6 to 19-0-0	5 5	8 10
	Unbleached "	440.2	Sweden, Norway, Finland, Germany, & Czechoslovakia.	11-7-6 to 13-15-0	5 5	8 10
1930-31	Bleached "	812.0	Sweden Norway & Finland	13-2-6 to 15-13-3	5 5	8 10
	Soda Bleached Sulphite.	19.5	Do	18-5-0	5 5	8 10
	Unbleached Sulphite	303.1	Do	11-2-6 to 13-2-6	5 5	8 10

13. The figures show an increase in the quantity of pulp imported, as there has been an increase in our production of paper. As will be seen from the following figures, the increase in the import of pulp has not kept pace with the increased quantity of paper produced:—

Year.	Pulp consumed. Tons.	Paper produced. Tons.	Quantity of pulp used per cent. of paper produced.
1913-14	720	1,112	64.8
1930-31	1,160	2,290	50.6

14. In the absence of Indian pulp all the pulp used by us has been imported, and as our last year's figures show a consumption of more than 1,100 tons, we count upon using in the future a quantity between 1,000 to 2,000 tons per annum depending upon the quality and quantity of paper produced. When bamboo pulp is available things will be different. The minimum quantity of imported pulp required will then depend upon the quantity and quality of the bamboo pulp that will be available for our use, but, generally speaking, even if bamboo pulp be available, in sufficient quantities, about 15 to 20 per cent. of imported sulphite pulp will still be necessary to import certain qualities to the finished paper.

15. There has been a fall in prices of Wood Pulp lately. This is attributed entirely to "Over-production and under-consumption". In October 1930, it was calculated that the over-production of Cellulose amounted to between 10 to 20 per cent. in the Northern European countries, owing to general world depression. Even in America the condition was no better, and the depressed situation in the Cellulose market forced the Puget Sound Pulp and Timber Company, Bellingham, Wash., to file a petition with the Treasury Department at Washington alleging as the cause thereof the dumping on the American Market of pulp from Sweden, Canada, Finland, Norway and Germany. While no official statement was given out by the Department, it was understood that the Company alleged that pulp was being sold in the United States at less than the cost of production (The World's Paper Trade Review, October 10, 1930)—

"Evidence of the state of things in pulp circle," writes The World's Paper Trade Review, of 10th October, 1930, "is forthcoming in the announcement that Scandinavian and other continental chemical pulp interests have been meeting this week in Copenhagen to consider the situation. For some time there has been talk of an arrangement for curtailing production, and the meeting in Denmark was to discuss a general scheme of limitation. Prices have lately declined to such low figures that they scarcely covered costs of production, if that, and it was felt that something would have to be done to adjust the relation of supply and demand."

As was anticipated, the sulphite pulp representatives from Sweden, Norway, Finland, Czecho-Slovakia and Memel, sitting in Conference at Malmo, decided to agree to reduce the production of sulphite pulp by 15 per cent. The agreement, operating from 1st October, 1930, to 1st January, 1933, will relieve the export market to the extent of about 300,000 tons per annum, of which about one-half will apply to Sweden, and the Norwegian production will be reduced by 30,000 to 35,000 tons per annum. Thereupon, on 19th December, 1930, the World's Paper Trade Review wrote:

"Satisfaction is felt at the ratification of the agreement among European producers for a curtailed production of sulphite pulp. An estimated reduction of 25 per cent. in the Canadian output added to the 15 per cent. in Europe is believed to point the way to a stabilisation of the sulphite market."

And on 8th May, 1931, the same Journal gives the following report on the wood pulp situation:—

"In a report on the wood pulp market, the Swedish wood pulp Journal speaks of a slightly larger turnover, though the situation is still dull. The

agreement of the last autumn between the sulphite producing countries of Europe will, it is considered, cause a considerably greater reduction in the output of sulphite than that provided for by the agreement, which is 15 per cent. At a meeting at Oslo, on April 21st and 22nd, of representatives from the countries which had signed the agreement, reports were rendered regarding the reductions already effected, and according to rumour it was then proved both that greater reductions had been made by April 1st, than those which it had been agreed should be effected by June 1st, and that during the month of April and May further heavy reductions of output were to be expected, e.g., in Sweden and Norway. In the lastnamed country the conflict which began in the middle of March has caused a practically complete stoppage in the pulp industry, and as far as it is now possible to predict, there is very little chance of resumption of work until the end of May at the earliest. By co-operation for the purpose of regulating output a guarantee has been provided against the markets being swamped by too large production. As regards the price level, this must be considered low enough for even the buyers to realise that it has been depressed to the utmost limit."

Therefore "it is morally certain", as stated by the Paper Makers' Monthly Journal of 15th April, 1931, "that as soon as industrial conditions become a little brighter, pulps, chemicals and materials will cost more. Paper will cost more, unless papermakers are prepared to forego reasonable profit indefinitely."

16. As neither a grass nor a bamboo mill, it is not possible for us to make use of indigenous materials other than rags, jute, hemp, waste paper, etc. Our recent progress in the manufacture of paper from these materials is very appreciable. Since 1923-24 we have used them in increasing quantities so that at present our consumption of these materials is at least 100 per cent. more than ever before, since the establishment of our Mills. By the use of these materials we are able to reduce cost of badami papers, and produce them in different qualities, selling them as low as at As. 2-3 to As. 2-8 per lb. (net prices ex-Mills). Our progress since 1923-24 will be seen from the following statement:—

Total indigenous materials used in—

	Tons.
1924-25	1,163
1925-26	1,287
1926-27	1,404
1927-28	1,602
1928-29	1,624
1929-30	2,171

As to progress in quality, the accompanying samples of our paper will speak for themselves.

17. The quantity of each of the chief auxiliary materials required per ton of finished paper, according to our present practice, is as follows:—

Materials.	Quantity required per ton of finished paper.	Per cent. consumption.
Rosin	·019 to ·025	2 to 2½ of finished paper.
Sulphate of Alumina	·038 to ·067	3¾ to 6½ „ „
China Clay	} 05 to ·1	5 to 10 „ „
French Chalk		
Caustic Soda . . . . .	.....	4 to 6 of rags or gunny.
Bleaching Powder . . . . .	.....	5 to 7 „ „

The prices are as follows:—

	Per ton delivered Poona Mills.
	Rs.
Rosin	300
Sulphate of Alumina	135
China Clay	78
French Chalk	88
Caustic Soda	355
Bleaching Powder	160

18. A better quality of China Clay is now produced in India than was the case in 1923-24, and is suitable for paper making. The freight, however, to our Mills is prohibitive.

Sulphate of Alumina is now available in India of a suitable grade for paper making. We ourselves are arranging to make the same at our Mills from Bauxite available in India.

Rosin, French Chalk, and Ochres are available more freely than before.

19. Form No. III regarding the consumption in our Mills of the chief primary and auxiliary materials is annexed herewith duly filled in.

20. The total labour employed by us in our Mills during each of the past seven years is as follows:—

1924-25	186
1925-26	247
1926-27	386
1927-28	267
1928-29	333
1929-30	452
1930-31	507

The work of collecting primary materials is done by our contractors.

21. The following are the total wages for labour employed in our Mills, during the years 1924-25 to 1930-31:—

Year.	Amount.
	Rs.
1924-25	62,685
1925-26	72,237
1926-27	59,522
1927-28	57,388
1928-29	76,265
1929-30	1,16,321

22. Almost all our skilled workmen and supervisors are Indians, from adjacent village who have been trained in our Mills from boyhood upwards, and there has been no European or imported labour employed in our Mills. A European machine-supervisor who was employed by us for a short

time at the initial stage of the Company about 45 years ago, has been recently re-engaged as a machine-supervisor in our Poona Mills, not because of any special necessity, but because we had the chance of getting an experienced man on a retired salary,—one, who had been brought out by ourselves as a young man in 1886, and who had subsequently served most of his time in some of the Calcutta Mills.

Incidentally, we may mention that our Bombay Mills, as well as our new Paper Machine at Poona with its engines, pumps, etc., has been entirely erected by our engineers and workmen trained in our own Mills, without the help of any imported engineer or workman.

23. Almost all our workmen are obtained locally, and they prefer to live in their own adjacent villages. But we provide housing for those requiring it, for which purpose blocks of rooms have been built and accommodation supplied free of charge. We have a paid doctor to attend to our workmen and their families, and we provide medicines free of charge. There is a crèche where infants of female workers are taken care of during working hours.

24. There have been no changes since the last Tariff Board enquiry in the arrangements for the supply of power in our Mills. We have, however, entirely replaced at our Poona Mills the old steam-pipe-line, reducing unnecessary bends and shortening the length, have installed a new economiser in place of the old one, and has discarded, in connection with old paper machine at Poona, the fixed-speed, slow and heavy type long stroke horizontal engine which was previously used to drive both the various pumps, etc., at the wet end, and also the paper machine itself, replacing the same by two separate high speed, enclosing type engines, one being a variable speed engine to drive the paper machine at a variable speed, and the other to drive the wet end at a constant speed, on modern lines.

The consumption of power for beating or pulping depends upon the kind of paper made and the materials used, but on an average it is about 1,880 I.H.P.-hours per ton of finished paper. The consumption of coal at the Poona Mills during the past six months amounted to 3.5 tons per ton of finished paper. This is with reference to C. P. Coal which is 15 to 20 per cent. inferior to good quality Bengal Coal. The consumption of fuel at our Bombay Mills during 1930-31 amounted to 0.98 tons of Bengal Coal, and 0.148 tons of crude oil per ton of finished paper.

We have under contemplation the entire replacement of our existing power plant by an up to date steam-electric generating or other economical plant, and negotiations in this connection are in progress with calculations based on effecting a considerable saving in fuel. But the facilities for finance involved will greatly depend upon the findings of the Tariff Board, and the assurance that can be held out by Government for its continued support to the industry, and the continuance of the protective policy.

25. (1) We estimate the present production of paper in India as slightly more than 40,000 tons per annum.

(2) In order to estimate the total Indian demand as regards—

(a) paper of all kinds, and

(b) paper of the kinds which are or are likely to be made in India, we calculate as follows:—

(a) The total imports in 1929-30 amounted to 118,152 tons and dropped by about 15 per cent. in the following year. But since this drop is solely attributed to the general world depression, and since the imports are otherwise steadily rising, we take the figure obtained in 1929-30 as a fair indication of the total Indian demand of foreign paper, by adding to which the Indian production, *viz.*, 40,000 tons, we estimate the total Indian demand of paper of all kinds to be about 158,000 per annum.

- (b) Taking into consideration the imports in the year 1929-30, we believe the following are likely to be manufactured in India to replace the foreign supplies:—

	Tons.
The whole of the imports of printing paper of the protected variety	8,540
About 66 per cent. of the total imports of writing paper (<i>viz.</i> , 16,685 tons)	7,120
About 66 per cent. of the total imports of packing paper (<i>viz.</i> , 14,342 tons)	9,560
TOTAL	25,220

By adding to this the total quantity produced in India, *viz.*, 40,000 tons, we estimate the total Indian demand of paper of the kinds which are, or are likely to be, manufactured in India, to be about 65,000 tons per annum.

26. Regarding the conclusion arrived at by the Tariff Board at the last enquiry regarding the possibilities of developing a market for Indian made pulp: (a) in India and (b) abroad, we would state, with respect to (a), that owing to the support given by the present protection the potential purchasers of pulp in India have not only been kept alive, but their demand has been considerably on the increase. Whereas the consumption of imported pulp by the Indian Mills at the time of the last enquiry was about 10,000 tons, and 13,250 tons before the War, it reached in the year 1929-30 the figure of 24,300 tons, and this increase has been side by side with the increase on the consumption of indigenous materials. Our own consumption amounted to more than 1,100 tons in 1930-31, and, as we hope to concentrate more and more on the production of white paper, if the policy of protection is continued, we expect our consumption will be much more in the near future, and we shall be in a position to take up at least 2,000 tons whenever Bamboo pulp becomes available. Even though the grass mills are beginning to make their own Bamboo pulp, nevertheless their own demand is alive, and as a matter of fact, is increasing to keep pace with the large increase of the Indian demand for paper which has taken place since 1925-30; so that if, after the pioneer work is done, an opportunity is at hand to establish an industry on a large scale near the raw materials, or under other favourable conditions, where, by advantage of mass production, Bamboo pulp can be produced cheaper than by the mills themselves, to whom the cost of Bamboo delivered at their mills cannot but be excessive, then it is evident that the mills will become purchasers again for ready and cheaper pulp. But, although this much can be said, in view of the developments that have taken place in the manufacture of Bamboo pulp since the last enquiry, whereby Bamboo pulp as a paper making material has gained ground, that the establishment of a large pulp industry in the future is more within the bounds of possibility than ever before, still there are no reasonable hopes of its development within a measurable time. And until such industry comes into existence, the grass mills will continue to make their own pulp, and therefore, under these circumstances, no separate pulp industry can possibly come into existence merely to cater for the wants of the Indian mills alone. Still the fact stands that the Indian demand for pulp has increased, and will increase enormously within a decade, if the large increase which took place in the Indian demand for paper from 1924-25 to 1929-30, can be taken as an indication of what is likely to happen within the next ten years.

As regards (b) the possibility of developing a market for Indian Bamboo pulp abroad, the Tariff Board based its consideration mainly on (a) the estimated rapid exhaustion of the world's supplied of pulp-wood, and (b) on the comparative cost of pulp manufactured from bamboo and from wood. In our opinion there are no reasons for revising the opinion expressed by the Tariff Board regarding the impending world's shortage of pulp wood. The

recent fall in prices of pulp, would indeed lead to the belief that supplies of pulp wood were more plentiful and cheaper. But that this is far from being the case, and that on the contrary deforestation is proceeding apace surely and certainly,—and is even accelerated by the fact that over-production, which is entirely the cause of the recent fall in prices, brings in its train over-cutting,—will be clear from the following article which appeared in *The World's Paper Trade Review* of 23rd January, 1931, under the heading "Paper making and Forestry":—

"When the low prices of wood pulp are so disturbing to sellers and when this circumstance is attributed to over-production, it seems strange to be brought up against the problem of the precarious outlook for pulp wood. This is a matter which Mr. Frank J. D. Barnjum has made his own. In addition to bringing the subject before the Forestry Committee of the Imperial Conference, of which he was a member, he has since broadcast his views in the form of reprints of his facts. Taking the long view, he is particularly anxious about the future supplies of wood from the Canadian and the Imperial standpoint; and as he has personally investigated the situation for many years, he is undoubtedly an authority, whose views are to be regarded seriously. In summarising the results of his investigations he states that even accepting the Canadian Government's latest statistics of 1,150,000,000 cords of available soft and hard wood at their face value, there are only about eight years' available supply remaining in Canada. Mr. Barnjum has an answer for the question as to why wood is selling at existing low prices when the end of supply is so near, by retorting that the answer is over-production and over-production in this case means over-cutting."

But, although events have justified the belief that wood supplies were diminishing, its effects on the prices have not been evident as they are the result of acute trade depression throughout the world, and the outlook so far as an early rise in wood prices is considered is by no means inspiring.

(b) Regarding the relative costs of pulp made from wood, and that from bamboo we might state that although definite progress has been made towards reduction in the manufacturing costs of the latter, both by the Dehra Dun Institute and by the manufacturing mills themselves, so as to bring it within limits comparable with the prices of chemical pulp in the world's market, still in view of the falling prices of wood pulp, and the fact that the stabilisation on the sulphite market will still be in long way off till selling prices are more in accord with the cost of production and the rising costs of pulp wood, we see no reason to revise the conclusion arrived at by the Tariff Board that "though the development of an export trade in the future is possible the prospects of its coming about at any early date are not assured".—(Page 63 of the Report.)

27. Regarding the question of a protective duty on imported pulp it may be said that circumstances have justified the conclusions arrived at by the Tariff Board that the proposal for the protective duty on imported pulp could not be supported. We have already stated in view of the fact that the grass mills are beginning to make their own Bamboo pulp, no separate Bamboo pulp industry can possibly come into existence merely to meet the needs of the few remaining mills. If then it is possible for the grass mills to make their own Bamboo pulp at the same price or cheaper than imported pulp the only effect a protective duty will have will be to wipe off those mills that are dependent upon such imported pulp, and thus drive out of existence the very mills that create a demand for pulp. If, on the other hand, Bamboo pulp made by the mills is found to be more expensive than imported pulp by reason of high costs of bamboo to the Mills or high costs of conversion, and if the object of a duty on imported pulp is to continue the manufacture of bamboo paper, and the carrying on of exploratory work, until in the words of the Tariff Board,

"the process of manufacture most likely to lead to cheap production can be determined and costs reduced to a minimum by perfecting their processes in all their details"

or till a large industry is established under conditions which can produce Bamboo pulp cheaper than imported pulp, then to force the grass mills and those other mills which depend upon imported pulp to entirely abandon its use will eventually necessitate an even higher duty on imported paper. Nor can a duty on imported pulp hasten the ultimate object, viz., the establishment of a large industry for export trade by merely assuring to the promoters the comparatively small home demand.

The whole situation may be summed up as follows:—

(1) Events have justified the Tariff Board's anticipations that the grass mills would almost certainly make their own arrangements to supply themselves with Bamboo pulp, and it was not likely that a separate Bamboo pulp industry would come into existence.

(2) A duty on imported pulp may promote the development of bamboo, but will necessitate an even higher duty on imported paper.

(3) For reasons mentioned on page 543 it is not yet possible to forecast any approximate date when the prices of pulp will advance, and the prospects of the development of a considerable export trade in Bamboo pulp are still remote.

(4) Although the manufacture of first class Bamboo pulp is an established fact, sulphite wood pulp will still be a necessary adjunct for certain classes of paper,—those for instance in which a certain rattle and firmness in handling are essential, and for the manufacture of which a certain amount of manipulation in the beaters for bringing about the so-called "wetness" in the pulp is necessary.

(5) The best way, therefore, to promote the manufacture of pulp and paper from Bamboo is to protect the paper making industry, and further its development by every possible means, so as to take advantage of the existing mills' ready resources for the manufacture of pulp and its conversion into paper, their ready and well developed marketing organisation, and the money and years spent by them in training their men for this industry, and profiting by their cumulative experience. Thereafter, in the words of the Tariff Board:

"The development of an export trade in Bamboo pulp may very well be left to look after itself in due season."

There are no grounds, therefore, in our opinion for reconsidering the question of protective duty on imported pulp.

28. The prices at which imported paper which competes with Indian paper has entered the country, in respect of those classes which form the bulk of our output, are as follows:—

	£	s.	
Cream Laid—			
1923—February . . .	30	5	(Belgium).
„ —May . . .	35	7	(Esparto, British).
„ —August . . .	30	10	(Continental).
1929—August . . .	36	0	(Esparto, English).
„ —November . . .	30	15	(Continental).
„ —December . . .	31—7		(British, ordinary).
1930—February . . .	31	5	(British, ordinary).
„ —June . . .	28	5	(Finnish).
„ —June . . .	30	10	(British, ordinary).
„ —June . . .	25	10	(Belgium).
1931—April . . .	26	0	(Dutch).
„ —April . . .	25	5	(Norwegian).

The duty is Rs. 140 per ton.

Landing and other charges are about Rs. 7 per ton.

The prices are c.i.f. Bombay.

White Printing—

	£	s.	
1928—February	25	15	
—May	27	12	
„ —November	28	0	
1929—January	28	5	
—June	28	10	(British make).
1930—June	28	10	(British make).
—October	26	12	(Belgium).
1931—April	25	15	(English).
„ —April	24	2	(Austrian).
„ —April	23	15	(Belgium).
„ —April	20	15	(Belgium).

The prices are c.i.f. Bombay.

Landing and other charges are about Rs. 7 per ton.

The duty is Rs. 140 per ton.

Buff—

	£	s.	d.	
1928—February	19	10	0	(Unglazed).
„ —May	20	8	0	(Glazed).
1929—August	18	15	0	(Unglazed).
„ —December	20	2	0	(Glazed).
1930—January	17	17	0	(Unglazed).
„ —May	20	17	0	(Glazed).
„ —May	16	15	0	(Unglazed).
„ —December	14	15	0	(Unglazed).
1931—April	14	7	6	(Unglazed).
„ —April	15	15	0	(Glazed).

The prices are c.i.f. Bombay.

Landing and other charges are about Rs. 7 per ton.

The duty in 1930 was 15 per cent. on the Tariff valuation of As. 2 per lb.

The duty in 1931 is 20 per cent. on the Tariff valuation of As. 1-10 per lb.

Brown—

	£	s.	
1929—March	16	2	
„ —October	16	15	
1930—January	17	5	
—June	14	7	
1931—April	14	7	} Depending upon the qualities.
„ —April	14	5	
„ —April	11	5	

The prices are c.i.f. Bombay.

Landing and other charges are about Rs. 7 per ton.

The duty in 1930 was 15 per cent. on the Tariff valuation of As. 2-3 per lb.

The duty in 1931 is 20 per cent. on the Tariff valuation of As. 2 per lb.

29. The railway freight paid by importers from the ports to selected up-country markets and the Railway freight paid on the produce of our mill to the same markets are as below :—

	Distance. Miles.	Railway freight pies per lb.
From Okha to Ahmedabad	311	1.31
Bombay to Ahmedabad	310	1.66
Madras to Bezwada	263	1.51
Hadapsar to Bezwada	592	3.51
Madras to Bangalore	222	1.22
Hadapsar to Bangalore	572	3.22
Karachi to Lahore	835	4.00
Hadapsar to Lahore	1,282	6.88

N.B.—Hadapsar is the Railway Station adjoining our Poona Mills.

30. The prices realised by us for each principal class of paper manufactured for each year since 1924-25 are as follows :—

Year.	Ledger and Writings.	White and coloured printings.	Superior Badami.	Ordinary Badami.	Wrappings, brown and coloured.
1924-25	A. P. A. P. Nil	A. P. A. P. 3 9 to 5 0	A. P. A. P. 3 4 to 3 6	A. P. A. P. 2 7 to 3 4	A. P. A. P. 1 9 to 3 3
1925-26	3 8 to 4 4	3 8 to 3 11	3 3 to 3 8	2 6 to 3 1	2 0 to 2 2
1926-27	3 8 to 4 4	3 5 to 4 1	3 2 to 3 9	2 3 to 3 0	1 6 to 2 4
1927-28	3 8 to 4 4	3 2 to 4 0	3 2 to 3 8	2 1½ to 3 0	1 6 to 2 4
1928-29	3 6 to 4 0	3 3 to 3 10	3 1 to 3 8	2 1½ to 2 11	1 6 to 2 5
1929-30	3 4 to 4 1	3 3 to 3 11	3 1 to 3 8	2 ½ to 2 10	1 6 to 2 6
1930-31	3 3 to 4 0	3 2 to 3 9	3 2 to 3 5	2 1 to 2 10	1 6 to 2 5

The average price realised by us for printing paper, writing paper, and paper of all sorts is as follows :—

Year.	Printing.	Writing.	Paper of all sorts.
1924-25	0 2 10	Nil.	0 2 6½
1925-26	0 3 9	0 3 10	0 2 8½
1926-27	0 3 7	0 3 9	0 2 9
1927-28	0 3 7	0 3 9	0 2 9
1928-29	0 3 7	0 3 9	0 2 10½
1929-30	0 3 6	0 3 8½	0 2 9

31. The prices at which the products of our Mills have been sold at up-country centres generally correspond with those in places in the vicinity of our factory making due allowance for freight to destination.

32. The prices realised by us for our paper in the market are generally a little lower than the price of corresponding class of imported paper. In a few cases where our finish, etc., is slightly inferior to the imported product this lower price is justifiable. But in most cases it is due to the keenness for getting the better of the other man with which the Indian merchant is generally credited, so that rightly or wrongly, making most of the prevailing notion that Indian made articles are inferior to imported goods, the Indian merchant insists on closing every bargain at lower prices as he is sure of getting them, although in his heart of hearts he may be fully aware that a particular product is equal, if not better, than its foreign competitor.

33. We have every reason to believe that prices at which foreign products sell for export to India are in the main unremunerative.

Owing to the present general condition of trade and commerce, the paper making industry throughout the world is in a state of extreme depression. Business is not available in sufficient volume to keep the mills going on full output, and selling prices have to be cut down to accommodate buyers. Wood free mills particularly are almost without exception curtailed production, with short time in many places. In England, for instance, foreign competition is keener than ever before, and unemployment which a year ago was in the region of 6 per cent. in the paper industry, has now reached a factor well over 10 per cent. (The World's Paper Trade Review, 10th May, 1931). When, therefore, the mills throughout the world are finding it extremely difficult to keep up their tonnage, it is no wonder that in their keenness to find trade for their surplus stock, the foreign mills are offering paper in the Indian markets at prices which are extremely low and mostly unremunerative. The following extracts from Paper Trade Journals will bear out what is stated above, and will show the state of the industry as it exists throughout the world:—

"Owing to unstable market conditions, fostered by reduced consumption, foreign and local competition, uneconomical paper prices are an unpleasant feature. . . . Foreign competition is particularly keen, and the United Kingdom as an open market naturally attracts surplus supplies. The low selling prices of paper generally have a most demoralising effect, and it is time that a halt was made, as it is evident that the tendency to secure orders on a non-profitable bases, must have only one result—financial disaster."—(The World's Paper Trade Review, 23rd January, 1931.)

"Paper is reflecting the depressed condition of trade, commerce and industry in general. With few exceptions the mills in the industry are just about holding their own. . . . The newsprint mills are labouring under the disadvantages of having to face surplus production elsewhere at a time when demand and prices are at their lowest level. Nor is there help from market overseas, for in these quarters there is industrial distress as keen as, or keener than our own. . . . Wrapping mills are experiencing a great deal of difficulty in keeping up their tonnage and for the greater part they are certainly not maintaining their price levels. In search of trade some foreign mills have circularised the printing and wrapper using trades direct, offering small lots of wrapping at remarkable low prices."

"Wood-free mills have brought their prices down to a level which is getting dangerously near, to pre-war standards. Wood-free imitation art paper at under 3d. a lb. indicates the length to which some mills have gone. At the present time such papers as super-calendered printing, M. F. white and tinted, M. G. poster, wood-free imitation art and second grade writings are selling at a loss so far as some mills are concerned. It is difficult to convince that present price levels represent anything more than a desperate bid for business. Much the same thing might be said of raw materials."—(The Paper Maker's Monthly Journal, 15th April, 1931.)

"The Board of Trade returns for the first quarter are what we expected them to be so far as paper is concerned, but they are none the less disturbing on that account. Nor is it any great consolation to know that on the whole our falling away in trade is no worse than what has been registered in America, and little different from what is being faced in Germany and France. These countries have, at any rate, curbed the imports in an effort to help home industries, while we have kept our doors open for admittance of those who would like to find some relief for their manufacture in the shape of orders which represent work. So we add to our workless and to the burden of those who have the responsibility of maintaining the workless."—(The World's Paper Trade Review, 24th April, 1931.)

"While in New York, Mr. Southouse was able to review the paper situation and he found the state of things there considerably worse than they are in this country. The bulk of the mills were only working for 3 to

5 days a week. Further than this, the prices were very low. Every section of trade and industry in the United States is suffering from depression and it is estimated by some of the leading Banks that the unemployed figure reaches some thing like 3 to 6 millions, which is sufficient indication of the fact that business is very bad indeed."—(The World's Paper Trade Review, 11th September 1930.)

The World's Paper Trade Review of 3rd October, 1930, states the following with respect to the paper trade in Germany, as given by a Berlin correspondent of the Times' Trade Supplement:—

"The world consumption of paper, it is mentioned, has again grown in the past half year, but more countries are producing so that competition in foreign markets has become very keen, and while the prices obtained at home are described as being still relatively satisfactory, those obtained abroad are extremely low."

34. Foreign competition is keenest in Bombay, Calcutta and Madras, and particularly so in Bombay.

35. We are not aware that there is any difference in price between bamboo paper and paper made from other indigenous materials,—by bamboo paper we mean paper made partly from bamboo and partly from other materials, as to our knowledge, no paper made entirely from bamboo has yet been put on the market.

36. There is a marked variation in the quality of various kinds of paper produced by us since protection was granted, the quality being better in every respect. This is due partly to closer supervision, better experience gained by the workmen, more care taken in the selection and sorting of materials, and principally due to several improvements effected in the old paper machine at Poona, and particularly to a new paper machine of the latest design erected at the Poona Mills. We send herewith a sample book to show the quality of a few of kinds of paper manufactured by us.

37. We are adversely affected by the application of the existing test for determining newsprint for customs purposes.

By the introduction of the existing test for determining printing paper not liable to protective duty, whereby the percentage of the mechanical pulp content of the paper is calculated on its total fibre content, and not, as originally intended in 1925, on the total weight or content of paper, the continental manufacturers are enabled to export into India free from protective duty substitutes for better paper which are interfering with the sale of our printing paper, and are seriously depriving us of our legitimate market of Badami Paper. These substitutes contain less than 65 per cent. of mechanical pulp as counted on its total content or weight, and more percentage of chemical pulp as compared with the ordinary newsprints, so that with the addition of larger quantities of China Clay or other similar loading, intentionally added, the paper is much better in appearance and finish than the ordinary mechanical newsprints.

The composition of paper containing 10 per cent. loading to conform with the existing test, and that of the same to conform with the original definition of newsprints would be as follows:—

	Composition to conform with the present test (<i>viz.</i> : 65% mechanical pulp on the fibre content).	Composition to conform with the original definition (<i>viz.</i> : 65% mechanical pulp on the total content or weight).
Mechanical pulp	58.5	65
Chemical pulp	31.5	25
Loading	10	10
	<hr/> 100 <hr/>	<hr/> 100 <hr/>

It will be seen therefore that under the present test the paper can contain only 58·5 per cent. of mechanical pulp instead of 65 per cent. as originally intended, and 31·5 per cent. of chemical pulp instead of 25. The high percentage of chemical pulp improves the strength and the "feel" of the sheet, while the loading improves the colour and the finish.

As a matter of fact a cheap printing may well contain 15 per cent. loading, and according to the present definition of newsprint will have the following composition:—

Mechanical pulp	55·25
Chemical pulp	29·75
Loading	15
	<hr/>
	100
	<hr/>

It is evident that it still contains a considerably higher percentage of chemical pulp, *viz.*, 29·75 per cent. as compared to 25 per cent., than it would have under the original definition. The lower percentage of mechanical pulp in the paper is a factor which improves the colour and the finish, both of which are still further increased by its larger clay content, while the strength and "feel" are maintained by the larger percentage of chemical pulp it contains. These are superior in all respects to the ordinary newsprints and can by no means be classed as ordinary newsprints.

The extent to which they are admitted free from protective duty is shown by the Customs Returns under the heading "Printings not protected" and the imports reached the maximum of 9,453 tons in 1929-30.

It is evident therefore that fairly large quantities of paper are imported duty free not for the purpose of newsprintings but for the purpose of competing in the market with the lower grades of the Indian Printing, and are doing considerable injury both to the consumers and the mills. The bulk of the Indian consumers are ignorant of the harm which is likely to be caused by the presence of a large quantity of mechanical pulp in the paper, which they are tempted to buy by its appearance and cheapness, for use, may be, for publications they value, and therefore it is in the interest of the consumers themselves as well as the mills to prevent the admission of such paper free of protective duty.

As a remedial measure we would suggest that the definition of newsprint should apply to paper which contains 75 per cent. of mechanical pulp on its fibre content, and therefore only those printings be exempted from protective duty, which contain not less than 75 per cent. of mechanical pulp calculated on its fibre content.

The composition of such paper containing 10 per cent. loading under this definition will be as follows:—

Mechanical pulp	67·5
Chemical pulp	22·5
Loading	10
	<hr/>
	100
	<hr/>

This will therefore restore the original intention of the Tariff Board and their definition of "newsprint", which was arrived at in consultation with and in the interests of all parties concerned, and which fixed the mechanical pulp content at 70 per cent. of the total weight with an allowance of 5 per cent. for testing errors, which allowance, however, has been usually exceeded by the customs authorities to facilitate work.

Further, while it obviates the necessity on the part of the Customs Department of a chemical analysis and returns the present and easier method

of "fibre count", it more clearly defines the difference between "news" and "ordinary" printings. Under this definition the proportion of chemical pulp to mechanical pulp is as 67.25 to 22.25, whereas, as has been shown above, the proportion under the existing test is 58.5 : 31.5, and therefore the character of the paper is very materially changed and more defined.

To meet the requirements of the big newspapers, if they require a better quality than the ordinary newsprints, such paper may be admitted under license.

38. We have installed since 1923-24 the following new plant and machinery in replacement of or in addition to the old plant:—

A set of new Economiser in replacement of the old one at our Poona Mills.

A new pulping machine Wurster's Patent by Voith at Poona.

A rotary strainer by Voith on our machine at Poona (which we call our machine No. 1).

A pair of granite and rubber press rolls on our machine No. 1.

A new heavy stock of 5-roll calender (designed to take two more rolls, if needed) by Voith on our machine No. 1.

A new paper machine of the latest design by Messrs. Thiry & Co., Huy, Belgium, with its complete wet-end, erected at Poona as per following details:—

Two stuff chests,—agitator gear by Bertrams, three-throw double acting vacuum pump by Thiry, Drum Rotary vacuum pump for felts, triple stage centrifugal backwater pump, Rotary strainer by Wandel, a high speed enclosed type twin cylinder steam engine to drive the wet end, a similar type variable speed steam engine to drive the paper machine. Paper machine by Thiry & Co., as follows:

—Suspended table to allow variation of pitch while working Centrifugal shake appliance, wire 16.20 m.m. \times 2.13 m.m. wide (84" \times 52' long) 4 suction boxes, three wet presses with granite top and rubber covered bottom rolls, Feltwashing rubber rolls, Felt suction box, leading cylinder 600 m.m., 5 drying cylinders 1,200 m.m., three Felt drying cylinders 1,000 m.m., one large drying cylinder 3,000 m.m. with under press rolls, intermediate calender, last drying cylinder 2,000 m.m. cooling cylinder and Spray damper, a stack of heavy 5-roll calender designed to take two more rolls, slitters and reels for 4-rolls, variable Cone Sectional drive with Hill Clutches.

The paper machine is so designed that it can be used as an ordinary machine for M. F. (or both sided glazed paper), as well as an M. G. machine for one-sided glazed paper (*e.g.*, poster paper), the change from one kind to the other can be made at the will of the operator. The plant and machinery acquired from Messrs. D. Pudumjee & Co., Bombay, comprise of the following:—

Rag-chopper and Vomitting type rag-boiler, 160 B.h.p. two cylinder Diesel Engine by Carels Frere, Belgium, for driving the beaters, etc. One Voith's 800 lbs. Beater and a 600 lbs. Bertrams; Beaters, two 300 lbs. Hollanders, one Wursters patent kneading or pulping engine by Bertrams, one Milnes patent refiner by Bertrams, staff chests, backwater and vacuum pumps, strainers, paper machine by Bertrams fitted with Whites patent sectional drive as follows:—Wire 72" \times 37' long. Two presses top granite and bottom rubber rolls, 17 drying cylinders 3' diam. Felt drying cylinders, intermediate cylinder, cooling cylinder and damper and two stacks 5-roll calender. One twin cylinder variable speed steam engine for the paper machine, Revolving Cutter, Guillotine, and slitting and re-reeling machine, Super-calender with 8 rolls by Fullner with steel rolls by Krupp, and an air-drying machine, lathes, drilling machines, etc.

We may state here that we have also built a large new Salle or Sorting house at our Poona Mills.

The results obtained from the additions and alterations mentioned above have fulfilled our expectations.

39. The sums spent by us on extension or alterations of plant and machinery since 1923-24 as regards paper are mentioned in the statement given below, which also includes sums spent on buildings:—

	Sums spent on additions or alterations of buildings in round figures.	Sums spent on additions or alterations of plant and machinery in round figures.	
	Rs.	Rs.	
1923-24 . . .	Nil	Nil	
1924-25 . . .	2,599	27,497	
		1,09,173	Value of the un- packed paper machine taken over from Messrs. D. Pudumjee & Co.
1925-26 . . .	Nil	10,114	
1926-27 . . .	102	18,176	
1927-28 . . .	636	14,358	
1928-29 . . .	5,687	22,053	
1929-30 . . .	7,717	7,579	
	<u>16,741</u>	<u>2,08,950</u>	

To the above should be added the value of the machinery and plant as erected at the D. Pudumjee Paper Mill, Bombay, *plus* the cost of erection and buildings, which were taken over from Messrs. D. Pudumjee & Co., as already mentioned, in 1923-24 at cost, *viz.*, Rs. 3,29,006.

40. We contemplate the following important replacement or extension of our plant:—

The replacement of the existing steam engine and boiler by an up-to-date steam electric generating or other economical plant as referred to in our reply to question No. 24.

The extension of the present beating plant at our Poona Mills by the addition of a few 800 to 1,000 lbs. beating engines of modern design.

A new slitting and a re-reeling machine at Poona.

An additional revolving cutting machine at Poona.

41. The block value of our property, as it stood in our books at the end of the last complete year for which figures are available, *viz.*, the year ending 31st March, 1930, is as follows:—

	Rs.	A.	P.
(a) Leases and concessions	Nil		
(b) Lands	4,643	7	5
(c) Buildings	3,26,879	3	10
(d) Plant and machinery	7,95,335	0	0
(e) Other assets (Office and Mill furniture)	4,239	5	0

42. We estimate the present day cost of buildings, plant and machinery for erecting a mill having the same capacity as our mills would be from about Rs. 30,00,000 to 35,00,000.

43. (1) The amount written off for depreciation each year since 1923-24 is as follows:—

On Plant and machinery—

	Rs.	A.	P.
1923-24	13,510	5	0
1924-25	5,836	5	10
1925-26	4,664	12	4
1926-27	4,619	9	7
1927-28	5,989	1	3
1928-29	6,027	8	8
1929-30	7,953	6	0

On Buildings—

1923-24	4,595	2	3
1924-25	3,071	1	1
1925-26	2,281	7	0
1926-27	2,258	9	10
1927-28	2,243	6	9
1928-29	2,252	6	3
1929-30	3,260	0	3

On Office and Mill furniture—

1923-24	108	4	8
1924-25	123	9	2
1925-26	116	1	7
1926-27	116	3	0
1927-28	138	11	11
1928-29	168	5	3
1929-30	211	9	4

Depreciation written off on Government Securities -

	Rs.
1923-24	Nil
1924-25	Nil
1925-26	2,000
1926-27	2,000
1927-28	Nil
1928-29	1,000
1929-30	Nil

(2) The following is the amount of Reserve Fund credited each year since 1923-24:—

	Rs.
1923-24	3,000
1924-25	Nil
1925-26	Nil
1926-27	Nil
1927-28	5,000
1928-29	5,000
1929-30	5,000

44. (a) The amount of the paid up share capital ranking for dividend each year since 1923-24 is as follows:—

	Rs.
1923-24	4,99,000
1924-25	9,24,000*
1925-26	9,24,000
1926-27	9,24,000
1927-28	9,24,000
1928-29	9,24,000
1929-30	9,24,000

* These include the sum of Rs. 4,25,000 due to Messrs. D. Pudumjee & Co., as the purchase value of their Bombay Mills in 850 fully paid up shares of Rs. 500 each although the shares were not issued to them till date of the respective Balance Sheet.

(b) The actual amount distributed as dividends each year since 1923-24 is as follows:—

	Rs.
1923-24	30,000
1924-25	27,720*
1925-26	Nil
1926-27	Nil
1927-28	Nil
1928-29	Nil
1929-30	Nil

* This includes the amount paid to Messrs. D. Pudumjee & Co., by way of interest in lieu of dividend payable on 850 shares agreed to be allotted to them in consideration of the purchase of their Bombay Mills although the shares were not issued to them till date of the relative Balance Sheet.

(c) The percentage on the paid up share capital which the dividend represented each year since 1923-24 is as follows:—

1923-24	6%
1924-25	3%
1925-26	Nil
1926-27	Nil
1927-28	Nil
1928-29	Nil
1929-30	Nil

45. Six copies of our Balance Sheet for each year since 1923-24 are sent herewith.

46. Our Company has not raised any debenture loans.

47. Form Nos. I and II regarding works costs are annexed hereto.

48. We are neither a grass nor a bamboo mill and we regret therefore we are not in a position to show the required details.

49. We give in the statement below our estimate of future works cost, based on the works cost of 1929-30, if full output is obtained.

It will be seen that whereas the works cost in 1929-30 amounted to Rs. 327.07 per ton the estimated cost for a full output is Rs. 308.6, i.e., there is reduction of Rs. 18.47 per ton, which makes a difference of about Rs. 75,000 a year.

The above does not take into account the further reduction in the estimated cost per ton, which is inevitable on account of the usual overhead charges, viz., Head Office expenses and Agent's commission, etc., being distributed over a larger outturn.

Estimate of future works cost based on the works cost of 1929-30, if full output is obtained.

	Quantity.	Expenditure.
	Tons.	Rs.
1. Primary Materials—		
Rags, Jute, Hemp, etc.	745·8	42,825
White Paper Shavings, letters, buffs manillas and Krafts, etc.	3,342·7	2,06,459
2. Imported pulp	1,393·6	3,30,444
3. Auxiliary Materials—		
China clay and French chalk	94·2	8,633
Ochres	20·7	1,243
Rosin	96·1	31,098
Sulphate of Alumina	269·3	37,422
Caustic Soda	39·5	14,118
Bleaching Powder	37·7	6,328
Soda Ash	15·1	2,651
Aniline Dyes . . . . .	...	13,051
Felts, Wires and Jackets . . . . .	...	26,900
Lubricants . . . . .	...	12,324
Belts and Ropes . . . . .	...	7,532
Baling Planks, Hoops and Hessian . . . . .	...	26,266
4. Mill Labour . . . . .	...	1,91,584
5. Power and Fuel—		
Coal	11,142	1,74,317
Crude Oil	139	11,801
6. Current repairs and maintenance . . . . .	...	26,685
7. Supervision and establishment . . . . .	...	32,617
8. Miscellaneous—Rent, Taxes and Insurance, etc. . . . .	...	29,917
9. Other items . . . . .	...	...
TOTAL . . . . .	...	12,34,445

Total output of paper in tons 4,000.

Total works cost Rs. 308·6 per ton of paper.

50. (1) The average value of the stocks of coal, materials and finished goods held by the Company is as follows:—

	Average during 1924-25, 1925-26 and 1926-27.	Average during 1927-28, 1928-29 and 1929-30.
	Rs.	Rs.
Coal and Fuel	3,647	8,560
Paper materials, Chemicals, Mills Stores and Packing materials	82,778	2,18,306
Finished Paper	1,00,366	1,76,250

(2) The average outstandings in respect of goods sold by the Company are as follows:—

	Average during 1924-25, 1925-26 and 1926-27.	Average during 1927-28, 1928-29 and 1929-30.
	Rs.	Rs.
Outstandings	89,195	1,27,125

51. The actual amount of the Head Office expenses (including the Bombay Office) and Managing Agents' remuneration is Rs. 31,600, which, in 1929-30, amounted to Rs. 14.8 per ton of paper produced.

The Agents' commission is determined at the rate of ten per cent. on the net profit made and divided by the Company.

52. The form this question has taken puts us in a peculiar position. As neither a *Sabai* nor a Bamboo mill, we cannot pretend to show details which those using these materials are in a position to do. But we are equally interested with the rest of the Paper Manufacturers in India in seeing the industry flourish, and naturally are in accord with all steps taken towards that end. Looking at it in this way, the question arises what was the *raison-d'être* of the legislation that took the form of the encouragement of the Bamboo pulp industry as the outcome of the Tariff Board's recommendations. When a protective Tariff was introduced for the promotion of the Bamboo Pulp Industry, was it to be inferred that the existing concerns, which had done so much pioneer work under heavy odds, and who were to be the home consumers of the proposed Bamboo Pulp Industry, were to be allowed to go under. In the quinquennium under enquiry the results hoped for for the Bamboo Pulp Industry have not only reached the stage of development which its promoters had in view, but show better results. With the economic conditions prevailing in India during this period, together with the general world trade depression, it is to the credit of the existing paper mills that they have made every effort to better the prospects of the paper industry in general, to which the Bamboo Pulp Industry can only be said to be ancillary. It is a vicious circle. Paper industry cannot thrive without an adequate supply of material, and Bamboo Pulp cannot come into its own, so far as home consumption is concerned, if there are no mills in India to utilise the same. This broader view has necessarily to be kept in the forefront in coming to the right decision on the question. When things improve, as they are bound to do, if they are given sufficient time, India may do without protection. But as things stand, with India pre-eminently an agricultural country, with industries like paper to be fostered, it would be suicidal to withdraw help at a time when it is most wanted. No industrial country in the world at the present day can get on without its protective Tariff wall. Canada, United States of America, Australia, Japan and all countries with industries to foster have subscribed to this policy, and if India does not follow suit it will soon be put out of existence, with the corollary that it will affect adversely the Bamboo Pulp Industry in its export aspects.

Opponents of protection urge as one of their arguments that the existing Indian concerns are out of date and must go to the scrap heap. Has there been any suggestion as to who is to take their place? If the determined and steady efforts, that have been made by the industry in India, thus go to naught, the country will be flooded by foreign paper, which will mean a drain of money to foreign countries, and the consumer will be the sufferer in the end. As it is, as we have already pointed out above, Indian made paper is being sold at economically competitive prices, and the public at large does not suffer materially thereby. The result has been that there is a steady growth in the Indian paper output, and it is estimated on all hands that the demand will steadily increase. The world's total consumption of paper is about twenty million tons a year, and with the advance of

education, the consumption which in India is nearly 1 lb. per head as compared with 70 lbs. per head per annum in the United Kingdom, will reflect itself in India by a proportionately larger demand for paper. It will be noted that the progress of the existing mills has been directed towards this end.

We have already indicated the efforts made by us towards effecting improvements and additions to our machinery and plant; and, with the strides made in this direction by the rest of the Indian Paper Mills, we do not think there can be much force left in the allusions made by the opponents of protection that the plant and machinery of the Indian mills is altogether out of date. And, when they point to the giant machines now being worked in America and elsewhere as examples, the idea can at once be exploded by pointing out the demerits of the system. In a country like India it is the smaller units that pay best in the long run. The following extract from a pertinent article entitled "British Paper Industry. Some Calculations Regarding Machines, Wire Width and Capacity", which appeared in the "World's Paper Trade Review" of 3rd May, 1931, by J. Melrose Arnot, who is considered an authority on technical matters is worth noting on this point:—

"When trade has slumped badly, industry generally is under a cloud, and, consequently great numbers of people are without employment. Spurred by their own sense of the necessities of the times, by the criticism of those in opposition and even of the business community, our Government, jointly and severally, lectures the manufacturers on their lack of understanding of their own business, on their want of initiative and up-to-dateness. They are told to scrap, modernise and reconstruct machinery, methods and men; in short to rationalise. Unfortunately the men who so glibly preach all this have no inside knowledge of business generally; when this so called rationalisation results in still further additions to the ranks of the unemployed, these mentors find that the manufacturers do not know how to market their goods, or are at fault in some other direction which is quite obvious to everybody but themselves. Apparently it never occurs to these people that they themselves (the Governments) are a chief cause of the difficulties of industry and trade that they, like pharaoh of old, in effect say "ye shall have no straw as heretofore, but, nevertheless your tale of bricks shall not be diminished, you must make as many bricks as before."

Mr. Arnot then continues to make an analysis of the paper-making industry with a view to seeing to what extent small machines still function, and he sums up as follows:—

"It is thus abundantly clear that small paper making machine still plays a very important role. Notwithstanding the criticism of the pure theorist, many of the small machines are able to make profit when the larger units find that by no means so easy. The very large machine is justified only where so-called mass production is possible, as in the newsprint paper trade, or where very long runs on one quality and deckle are the rule.

Paper is however, made in so many varieties of such widely differing quality, and the quantity of any one such variety required may be so small that only the smaller machines can possibly make it at a profit."

The last para. might as well have been written with particular reference to the conditions that obtain in the Indian Paper Industry and the difficulties the Indian paper-maker has to contend with in meeting small and very varied orders.

This is the position that we are called upon to face, and every administration that has the welfare of the country's industrial uplift must recognize the real facts at issue, and act accordingly. *Festina lente* should be the policy pursued. Thus it will be clear that the necessity for a protection policy still exists. Our reasons in support hereof find expression in detail in our Representation to your Board of 30th April, 1931.

Mr. R. H. Clapperton in his forward to the admirable work by Mr. W. Raitt on "The Digestion of Grasses and Bamboo for Paper-Making (1931)", thus pertinently remarks:—

"I think that no one who reads these chapters will have any doubt that the use of Bamboo as a raw material for paper is *imminent*, and that it is likely to provide us *at least* with something, which if properly husbanded, may remain a staple product for all time."

53. (i) We think the present form of protection by the levy of a specific duty applicable generally, with specified exceptions, has worked out successfully, and we suggest that this method should be continued.

It relieves the importers of an element of uncertainty consequent upon fluctuations in prices, and it operates with the greatest of ease and a minimum of fraud.

It automatically adjusts itself, so to speak, to the varying needs of protection, as, in the present instance of falling prices, it affords greatest protection when needed most, and similarly, in the case of the cheapest papers the protection is highest where its want is greatest. This should be the natural consequence of any scheme of protection as a condition peculiar to the Indian Paper Industry, for, the prices of its raw materials do not move in accord with the foreign prices.

Further, the present scheme is elastic in this sense that if any variation is necessary this can be arranged for by a surcharge or a rebate on any particular description of paper as the case may want.

(ii) In order to ascertain at what rate protection might be continued, we do not think it would be correct in our case to take our works cost as a basis for calculation on the same lines as those adopted by the Tariff Board when they fixed the present rate of Rs. 140 per ton, because the results would be vitiated by the fact that our white printings and writings are less than 30 per cent. of the total output.

We therefore consider it more correct to base our calculations on the data of the Balance Sheet. Thus taking our last audited Balance Sheet and Profit and Loss Account, *viz.*, for the year ending 31st March 1930 we would calculate in round figures as follows:—

	Rs.
For return on our paid up capital of Rs. 9,24,000 at 8 per cent. we require . . .	73,920
For depreciation at $7\frac{1}{2}$ per cent. on the value of our machinery and plant at cost price less depreciation allowed upto 1929, <i>viz.</i> , Rs. 6,16,520	46,239
For depreciation at $2\frac{1}{2}$ per cent. on the value of our buildings at cost price less depreciation allowed upto 1929, <i>viz.</i> , Rs. 2,37,893	5,947
	<hr/>
	1,26,109
	<hr/>
Less balance being profit during the year . . .	42,721
	<hr/>
	83,385
	<hr/>

which is the additional sum required to give a return of 8 per cent. on our capital after allowing for depreciation.

The total output during the year amounted to 2,124 tons, out of which Browns amounted to about 331 tons, which leaves a balance of 1,793 tons to cover the additional sum required as shown above, that is to say an increase is required amounting to about Rs. 46 per ton. And we take this as the measure of the amount by which the existing duty should be raised, meaning a surcharge of 30 per cent. on Writings and Printings.

It will be noted that even this amount would not be sufficient if depreciation were based on the replacement cost of machinery and buildings on the principle rightly adopted by the Tariff Board (para. 141, Report 1925), but in practical working it would be very difficult under the prevailing conditions to set aside such an amount.

If it is not possible to entertain the claim for additional protection to the extent mentioned above, then we should at least expect the continuance of the present specific duty of Rs. 140 per ton, allowing a sufficient length of time, in order that finance be assured to us for completing the contemplated additions and alterations to our plant. So that with the advantage gained by improvements as shall have been made, and with the help of the present protective duty even without any surcharge we feel sure our intensive efforts to keep the industry alive will not be in vain, provided that there is no duty on imported pulp, and the present protective duty is made applicable to all papers, unless specifically exempted, with power to the executive to increase the duty when found necessary.

(iii) We would ask for a protective duty on all classes of paper with the exemption of newsprints containing not less than 75 per cent. mechanical pulp calculated on its total fibre content, and such other exemptions as may be deemed necessary,—the nature of such exemptions being clearly defined.

The present scheme of protection by limiting its application only to writing and printing papers leaves the industry but a narrow scope of development, and it does not encourage the manufacture of various other descriptions of paper which might well be developed.

From our own experience, we submit that there is a field for development in the manufacture of cheap wrappings which can have at any time a chance of competing with the imported kinds, if these latter are subject to protective duties. For instance paper made with 70 to 80 per cent. waste paper and 20 to 30 per cent. gunny or waste rags is superior to the imported kinds, and has a chance of competing with them.

A separate industry on these lines in any particular location is not implied, but this much can be said with confidence that almost all the existing mills, while they have power to spare, might with advantage take upon them the manufacture of those kinds as a side line so to speak, for, all facilities for this purpose are with them, while such materials as are available in India in enormous quantities like old coarse gunny bagging and waste papers of all sorts, also old ropes, old canvas, tarpaulins and the lowest kinds of rags are allowed to go to waste, as well as the mills' own waste such as is thrown out after the useful kinds are removed, and which at present is destroyed or carted away.

Nor need the equipment for this purpose be very elaborate or expensive. A couple of "kneaders" or pulping machines, or in the alternative a couple of edge-runners, one or two Hollanders, and an M. G. machine might form the chief equipment. Even now there are separate mills in Germany working on those lines alone. For instance, a few miles from Heidenheim a one-machine mill makes M. G. paper entirely from waste paper without any addition of new fibres, and of a quality and colour which is distinctly superior to the "Mechanical" varieties of wrapping paper, which are now flooding the Indian market unprotected. The chief equipment of this mill comprises of a couple of edge-runners, a flat chip screen, a Hollander, and an M. G. machine, with the usual rotary cutter. This mill prefers to use edge-runners as it works up entire books and other waste paper without previous sorting.

We may state that during the War, and a few years after, more than 1,200 tons a year of casings and wrappings, both thick as well as thin, also coloured and grey were manufactured in the Bombay Mills on particularly the same lines as mentioned above, the bulk of which was consumed by the Cotton Mills, the thread-ball manufacturers, and other industries locally. This trade is now lost by the unrestricted influx of cheap foreign paper made mostly from mechanical, or rather, semi-mechanical pulp.

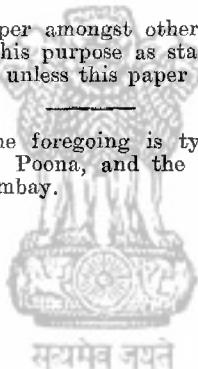
It is our experience that cheap coloured printings and cover paper made from 20 per cent. strong sulphite and about 80 per cent. "letters" (i.e., white paper written upon or partly printed) can compete with the cheap imported kinds and in point of permanance can be far superior to them, and for the matter of that superior even to the cheap printings produced here from grasses, seeing that they are made from materials which originally contained the finest kind of Cellulose used for writing and superior printing papers. Eventually about 20 to 30 per cent. of unbleached Bamboo pulp might be used to replace the strong sulphite stated above for cheap printings, and unbleached partly-boiled bamboo pulp for wrappings.

Therefore, as a side line, when the usual overhead expenses and mill supervision and establishment covered by the principal lines, the above proposition should be considered worth developing, provided the kinds of paper mentioned are protected. In which case a large trade in waste paper and similar waste materials can be organised, and will find employment for hundreds of men in the collection of the same.

And just as the existing mills have paved the way for the development of bamboo pulp, so will the existence of M. G. machines in these mills lead to the development of krafts and manillas and other wrappings from bamboo, particularly as it is now proved that bamboo is eminently suited for kraft and manillas.

With regard to poster paper amongst others we ourselves are equipped with a suitable machine for this purpose as stated on page 550, but it will not pay to make poster paper unless this paper is protected.

The paper upon which the foregoing is typed has been made at our Reay Paper Mills, Mundhwa, Poona, and the paper for the cover, at our D. Pudumjee Paper Mills, Bombay.



FORM I.
Statement showing the total works costs expenditure incurred in the production of paper.

	1924-25.		1925-26.		1926-27.		1927-28.		1928-29.		1929-30.	
	Quantity.	Expendi- ture.	Quan- tity.	Expendi- ture.	Quan- tity.	Expendi- ture.	Quan- tity.	Expendi- ture.	Quan- tity.	Expendi- ture.	Quan- tity.	Expendi- ture.
1. Primary materials—	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.
Bags, Jute, Hemp, etc.	16	816	105	5,355	136	7,020	272	12,887	25	10,480	396	22,740
White Paper, Shavings,	1,147	47,177	1,182	52,665	1,269	64,233	1,330	72,637	1,419	80,622	1,775	1,09,530
letters, huffs, manillas and												
Krafts, etc.	105	23,940	123	31,812	200	49,720	198	44,465	378	87,735	1740	1,75,466]
2. Imported pulp												
3. Auxiliary materials—												
China clay and French Chalk	26.7	2,513	11	1,276	40	4,230	61	5,032	56	4,928	50]	4,800
Ochres	41	2,055	35	1,925	10	600	...	...	6	380	...	660
Rosin	17.5	4,760	20	6,800	28	12,264	26	11,310	29	9,970	51	16,513
Sulphate of Alumina	35	5,320	39	4,836	56	7,840	77	10,010	91	9,454	143	19,371
Caustic Soda	75	327	5	1,930	5	1,760	12	4,278	10	3,590	21	7,497
Soda Ash	1.5	240	5	830	6	960	5	843	11	1,804	8	1,408
Bleaching powder	1.6	464	5	1,445	6	1,494	11	12,315	11	1,474	20	3,360
Aniline Dyes	...	1,826	...	2,200	...	2,371	...	4,650	...	4,200	...	6,330
Felt, Wires, Jackets, etc.	...	4,305	...	9,635	...	10,471	...	9,380	...	12,018	...	15,938
Lubricants	...	5,109	...	6,559	...	6,121	...	3,691	...	5,501	...	6,888
Belts and Ropes	...	1,227	...	1,434	...	1,526	...	6,170	...	7,176	...	4,310
Baling planks, Hoops and	...	9,300	...	9,213	...	9,730	...	13,871	...	17,028	...	13,947
Hessians.	...	...	...	...	...	...	...	...	...	...	...	...
4. Mill Labour	...	62,865	...	72,237	...	69,522	...	67,040	...	76,265	...	1,15,321
5. Power and fuel { Coal	1,360	35,355	2,142.5	46,820	3,087	60,116	4,110.7	64,951	4,905.3	69,596	6,228	97,434
Crude Oil	110.4	7,336	87.1	6,006	78.6	5,401	...	...	18	1,215	77.6	6,596
6. Current repairs and Main- tenance.	...	17,666	...	8,736	...	12,087	...	23,015	...	16,349	...	15,744
7. Supervision and Establishment	...	12,591	...	16,425	...	15,563	...	11,334	...	15,480	...	23,236
8. Miscellaneous—Rent Taxes, Insurance, etc.	...	22,702	...	23,715	...	22,516	...	17,097	...	21,953	...	26,623
9. Other items	...	...	...	...	...	...	...	...	...	...	...	...
Total	2,364.45	2,69,094	3,759.6	3,11,943	4,920.6	3,55,595	6,102.7	3,73,688	7,139.3	4,57,217	9,520.6	6,94,705
Total output of paper for the year in tons	876	945	1,109	1,251	1,391	2,124]						

FORM No. II.
Works cost per ton of finished paper.

	1924-25.		1925-26.		1926-27.		1927-28.		1928-29.		1929-30.	
	Quantity.	Expenditure per ton of paper.	Quantity.	Expenditure per ton of paper.	Quantity.	Expenditure per ton of paper.	Quantity.	Expenditure per ton of paper.	Quantity.	Expenditure per ton of paper.	Quantity.	Expenditure per ton of paper.
	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.	Tons.	Rs.
1. Primary materials :—												
Rags and gunny	·018	·02	·11	5·06	·12	6·33	·21	10·25	1·147	7·53	·186	10·18
White shavings, letters	1·3	53·85	1·25	55·73	1·14	57·9	1·06	57·98	1·02	58·0	·83	51·03
buffs, manillas, krafs,												
etc.												
2. Imported pulp (Bleached and Unbleached Sulphite and Soda Pulp).	·12	27·33	·13	33·06	·18	44·33	·16	35·54	·27	63·11	·34	82·04
3. Auxiliary materials :—												
China clay & French chalk	·03	2·87	·011	1·35	·036	3·95	·048	4·02	·04	3·54	·023	2·16
Ochres	·046	2·34	·034	2·03	·009	1·54	·02	9·04	·004	·26	·005	·31
Rosin	·019	5·43	·024	7·2	·925	11·05	·061	8·0	·02	7·16	·023	17·77
Sulphate of Alumina	·038	6·07	·041	5·11	·05	7·06	·009	3·51	·066	2·58	·067	9·36
Caustic Soda	·0008	·37	·005	2·09	·004	1·58	·004	·55	·007	1·3	·009	1·57
Soda ash	·017	·27	·005	1·37	·005	·36	·004	·35	·008	1·08	·004	·66
Bleaching powder	·018	·53	·005	1·53	·005	1·34	·008	1·85	·008	1·06	·008	1·57
Aniline Dyes	·	2·08	·	2·32	·	2·13	·	3·71	·	3·02	·	3·24
Fels, Wires and Jackets.	·	5·6	·	10·25	·	9·43	·	7·49	·	8·04	·	7·08
Lubricants	·	5·8	·	6·91	·	5·51	·	2·96	·	3·06	·	3·24
Bells and Ropes	·	1·4	·	1·51	·	1·37	·	4·13	·	5·58	·	1·38
Baling plants, Hoops and Hessian.	·	10·61	·	9·74	·	8·77	·	11·06	·	12·25	·	6·57
4. Mill labour	·	71·76	·	70·44	·	53·97	·	45·69	·	54·86	·	54·79
5. Power and Fuel { Coal : 1·55 } Crude oil : 1·26 }	·	49·41	·	56·0	·	56·0	·	51·91	·	50·94	·	49·0
6. Current repairs and maintenance.	·	20·16	·	9·24	·	10·9	·	18·39	·	11·76	·	7·41
7. Supervision and Establishment.	·	14·37	·	17·38	·	14·93	·	9·06	·	11·13	·	10·04
8. Miscellaneous—Rent, Municipal taxes and Insurance.	·	25·91	·	25·1	·	20·3	·	13·66	·	15·8	·	12·54
9. Other items	·	·	·	·	·	·	·	·	·	·	·	·
Total	3·2478	307·1	3·982	330·1	4·424	320·6	4·861	298·72	5·138	328·7	4·462	327·07
Total output of paper for the year in tons.	876		945		1,109		1,251		1,391		2,124	

FORM III.

	1924-25.		1925-26.		1926-27.		1927-28.		1928-29.		1929-30.	
	Tons. Nil	"	Tons. Nil	"	Tons. Nil	"	Tons. Nil	"	Tons. Nil	"	Tons. Nil	"
Grass :—												
(1) Quantity of material used												
(2) Quantity of finished paper, which material represents.												
Bamboo :—												
(1) Quantity of material used												
(2) Quantity of finished paper, which material represents.												
Other Local fibres :—												
(1) Quantity of material used	1,163.1		1,287		1,404		1,602		1,624		2,171	
(2) Quantity of finished paper, which material represents.	734.4		738.8		889		1,027.2		1,012		1,422.4	
Total indigenous fibres :—												
(1) Quantity of material used	1,163.1		1,287		1,404		1,602		1,624		2,171	
(2) Quantity of finished paper, which material represents.	734.4		738.8		889		1,027.2		1,012		1,422.4	
Imported pulp :—												
(1) Quantity of material used	105		123		200		198		378		740	
(2) Quantity of finished paper, which material represents.	89		104.6		170		169		322		629	
China clay and French chalk :—												
(1) Quantity of material used	26.7		11		40		61		56		50	
(2) Quantity of finished paper, which material represents.	16		6.6		24		36.6		33.1		30	
Other Auxiliary materials :—												
(1) Quantity of material used	98.2		109		111		131		158		254	
(2) Quantity of finished paper, which material represents.	36.6		35		26		18.2		23.9		42.6	
Total :—												
(1) Quantity of material used	1,393		1,530		1,755		1,992		2,216		3,215	
(2) Quantity of finished paper, which material represents.	876		945		1,109		1,251		1,391		2,124	

(3) Letter dated 17th September, 1931, from the Deccan Paper Mills Company, Limited.

In continuation of the writer's oral evidence in Bombay on August 30th, we have the honour to give below the supplementary information asked for by the Board.

(1) Our average realised price taking all classes of paper for the year 1930-31 is As. 2-9½ per lb. We may state that this is higher than the average price realised for the year 1929-30, as the quantity of white printings and writings made in the year 1930-31 amounted to 32 per cent. of the total output, whereas it was 22·8 per cent. in the previous year.

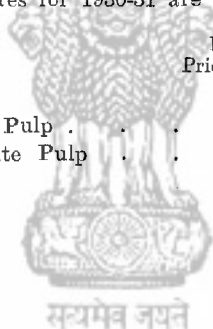
(2) The actual quantities of each class of primary materials used in 1930-31 are as follows:—

	Tons.
Imported pulp	1,160
Rags and gunny	353
White Shavings, letters, old records and various kinds of waste paper	1,595

(3) The total output for 1930-31 is 2,190·4 tons.

(4) The average price for imported pulp landed at the Mills in 1929-30, and the corresponding figures for 1930-31 are as follows:—

	1929-30 Price per ton.	1930-31 Price per ton.
	Rs. A.	Rs. A.
Bleached Sulphite Pulp	260 12	212 6
Unbleached Sulphite Pulp	192 14	170 4



THE DECCAN PAPER MILLS, LIMITED.

B.—ORAL.

Evidence of Mr. F. D. PUDUMJEE recorded at Bombay on Sunday, the 30th August, 1931.

President.—You represent the Deccan Paper Mills Company, Limited?

Mr. Pudumjee.—Yes.

President.—Your works are situated partly in Bombay and partly in Poona?

Mr. Pudumjee.—Yes.

President.—How many machines have you in Poona?

Mr. Pudumjee.—We have two machines in Poona.

President.—And one machine in Bombay?

Mr. Pudumjee.—Yes.

President.—You say that the total capacity of your mills as equipped at present is 4,000 tons?

Mr. Pudumjee.—That is right.

President.—And then you go on to say that the total capacity, that is the maximum capacity, is 5,700 tons?

Mr. Pudumjee.—Yes.

President.—What is it that prevents you from working up to your total capacity now?

Mr. Pudumjee.—At present we are not equipped with sufficient beating capacity.

President.—That is to say if you take the existing beating equipment into account, then your maximum capacity is 4,000 tons?

Mr. Pudumjee.—Yes.

President.—What kind of additional beating equipment do you require to bring you up to your maximum capacity?

Mr. Pudumjee.—We propose to bring in 800 lb. beaters.

President.—One beating engine?

Mr. Pudumjee.—The beating power should be enough to bring our capacity to 5,700 tons.

President.—You want one 800 lb. beater?

Mr. Pudumjee.—We have to change several of our beaters. That is the position. For, if we put in additional beaters, we would have to provide room for them.

President.—You will have to find more room for them?

Mr. Pudumjee.—Yes. We therefore propose to remove 450 lb. beaters and replace them by 800 lb. beaters.

President.—It is really replacing the present beaters of smaller capacity by beaters of larger capacity?

Mr. Pudumjee.—Yes. There are ten beaters. We would replace five of them.

President.—Have you estimated what the cost would be of replacing these?

Mr. Pudumjee.—Each beater would cost Rs. 6,000 to Rs. 7,000.

President.—What kind of expenditure would bring your equipment to 5,700 tons?

Mr. Pudumjee.—About Rs. 50,000.

President.—Can you tell me the precise capacity of each machine that you have now? First, take the machine working in Bombay.

Mr. Pudumjee.—I have worked out the figures, but I have not got them here.

President.—Tell us approximately.

Mr. Pudumjee.—I would put it at 1,700 to 1,800 tons. That is the capacity of our old machine at Poona.

President.—Was it 1,800 tons a year?

Mr. Pudumjee.—Yes. The capacity of the other new machine at Poona is 2,400 tons.

President.—What inch machine is that whose capacity is 1,800 tons?

Mr. Pudumjee.—100".

President.—You ought to be able to do more than that.

Mr. Pudumjee.—After all it is an old machine and we do not allow it to run at more than 150 feet per minute.

President.—What inch machine is the other one?

Mr. Pudumjee.—82" machine.

President.—2,400 tons is its normal capacity?

Mr. Pudumjee.—Yes.

President.—And then the Bombay machine?

Mr. Pudumjee.—As regards this 82" machine, I would say that it might be speeded up. But the speed we would work at here is 200 to 250 feet per minute.

President.—If it is run at 250 feet per minute, what would be the output?

Mr. Pudumjee.—2,400 tons per year at 250 feet per minute.

President.—If you had an 82" machine, normally you ought to be able to get out of it 250 tons a month or 3,000 tons a year?

Mr. Pudumjee.—Yes, if it is run at 300 feet per minute. That is the maximum capacity. But normally we would expect to get only 2,400 tons. Then, the Bombay mill, I would put down as 1,100 to 1,200 tons per year.

President.—What size is that?

Mr. Pudumjee.—72" machine.

President.—That is assuming that there is sufficient beating capacity?

Mr. Pudumjee.—Quite.

President.—I should like to know how exactly you divide the output at present between your Bombay works and your Poona works?

Mr. Pudumjee.—If you will please refer to the production made in 1929-30 ...

President.—What page are you referring to?

Mr. Pudumjee.—Form II. The production shown there under paper is 2,124 tons.

President.—You mean excluding wrappers for your own use?

Mr. Pudumjee.—Yes, and as I have explained wrappers and broke would increase the tonnage by 10 per cent.

President.—If you take only the finished paper, leaving aside broke and things like that, then you have got to add to 2,124 tons the wrapping paper which you made for your own use?

Mr. Pudumjee.—Yes.

President.—Then you get the total finished paper capacity?

Mr. Pudumjee.—Yes.

President.—What was the quantity of wrapping paper that you made for your own use—not more than 100 tons?

Mr. Pudumjee.—I should put it at 90 tons.

President.—That would be about 2,200 tons?

Mr. Pudumjee.—Yes.

President.—What I want to know is the division of your output between your Bombay Mill and your Poona mill.

Mr. Pudumjee.—We made about 500 tons of paper in the Bombay mills.

President.—Leaving about 1,700 tons for the Poona Mills?

Mr. Pudumjee.—Yes.

President.—How do you divide the various classes of your output between these two mills? Do you make the same classes at both the mills?

Mr. Pudumjee.—We make better kinds in Poona than in Bombay. In the Bombay mills we manufacture brown wrappings, coloured wrappings, and badamis—a little lower quality of badamis than is made in Poona.

President.—All your white printings are made in Poona?

Mr. Pudumjee.—Yes, the whole of it is made in Poona.

President.—What precisely is the reason for this distinction?

Mr. Pudumjee.—We have better facilities for making white paper in Poona than in Bombay. We have got ample supply of water there. The arrangements for working up rags are better.

President.—Why should they be better at Poona?

Mr. Pudumjee.—Because no washing or bleaching can be done in Bombay owing to shortage of water. So we generally use materials that do not require much washing in Bombay.

President.—It is largely a question of water supply?

Mr. Pudumjee.—Yes, and it is very expensive too.

President.—*Primâ facie* I should have thought that working your mills partly in Bombay and partly in Poona would be a somewhat uneconomical practice. I should like to know why you still operate this Bombay mill here apart from your main works in Poona?

Mr. Pudumjee.—There are certain facilities afforded at our mills in Bombay, although labour is Rs. 6 per ton higher. So far as Bombay is concerned, that is the only disadvantage. Otherwise in coal consumption we make a saving of about Rs. 20 in Bombay. We have a crude oil engine. The beating department is worked with the crude oil engine and the saving is nearly Rs. 20 per ton.

Mr. Rahimtoola.—Where?

Mr. Pudumjee.—In Bombay. It is a saving in our favour in Bombay.

President.—You save on fuel Rs. 20 in Bombay?

Mr. Pudumjee.—Yes.

President.—On labour you lose Rs. 6?

Mr. Pudumjee.—Yes. There is the item of freight. We have to take 1½ tons of raw materials for one ton of paper.

President.—What kind of materials?

Mr. Pudumjee.—Mostly waste paper and a small quantity of rags and gunny.

President.—Do you get larger supplies of waste paper here?

Mr. Pudumjee.—Most of it is taken from Bombay to Poona—practically the bulk of it so to speak.

President.—And the freight on that to Poona is a saving for the Bombay mill?

Mr. Pudumjee.—Yes. It comes to Rs. 9 per ton. On 1½ tons of materials required for the manufacture of one ton of paper it comes to Rs. 13-8.

President.—Then there is the freight on finished paper?

Mr. Pudumjee.—Yes, it comes to Rs. 9.

Mr. Rahimtoola.—Do you sell all your paper in Bombay?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—When you take the freight back into account, it means that the paper made in Poona is sold in Bombay?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—I am confining my attention to Poona at present.

Mr. Pudumjee.—If the quantity we are making in Bombay were made in Poona, it would in any case have to be brought to Bombay.

President.—Your point is that the kind of paper which you now make in the Bombay mills finds its best market in Bombay.

Mr. Pudumjee.—Yes.

President.—Therefore if you made it in Poona, you would have to bring it to Bombay?

Mr. Pudumjee.—At least two-thirds of it would be consumed in Bombay.

President.—On your present output?

Mr. Pudumjee.—Yes.

President.—If you made 500 tons last year in Bombay, say about 350 tons would be consumed in Bombay?

Mr. Pudumjee.—Yes. It saves packing and baling. That comes to Rs. 9 per ton. We sell in Bombay in loose or unbaled reams. If we were to bring paper from Poona, it would have to be packed and baled.

President.—All these advantages are temporary advantages?

Mr. Pudumjee.—They are.

President.—That is to say the moment you raise your output from 500 tons in Bombay to your total capacity say 1,200 tons, then of course the freight on the paper part of it largely disappears?

Mr. Pudumjee.—I do not quite understand the point.

President.—What I mean is this. Supposing the market that you can get for inferior paper of the kind that you make in Bombay is the amount of your sales in Bombay now which is about 300 or a little more than 300 tons, and if you increase your output in your Bombay mills to 1,000 tons then the advantage that you can get in respect of freight on finished paper would be reduced proportionate?

Mr. Pudumjee.—Under any circumstances we would have to provide a market for the quantity made. There is no market in Poona.

President.—Don't you get any concession freight from railways?

Mr. Pudumjee.—Not from Poona to Bombay. There are certain concession rates given to us for Delhi, Agra and Cawnpore, but none from Poona to Bombay because there is no competition. The railways do not agree to reduce the freight unless there is competition.

President.—If you take the freight from Bombay to Delhi and from Poona to Delhi?

Mr. Pudumjee.—It is almost the same. We have concession rates and they amount to almost the same.

President.—So that if you were sending your paper to the Delhi market from Poona, as far as the freight on the finished paper is concerned, it makes no difference?

Mr. Pudumjee.—No.

President.—But the advantage on the waste paper material would still remain?

Mr. Pudumjee.—Yes. A certain quantity of paper has to be sent to Ahmedabad and Northern India and there the question of freight comes in.

President.—Where you have no concession freight rate?

Mr. Pudumjee.—Quite so.

President.—I wanted to have some idea of the process of manufacture which you employ in your mills. Do you use rags, gunnies, waste paper and imported pulp?

Mr. Pudumjee.—Yes.

President.—The process of manufacture differs with regard to each of these materials; that is to say, as regards the imported pulp there is no work done in the pulp section?

Mr. Pudumjee.—No preparatory work.

President.—Since most of it is obtained in the form of bleached pulp?

Mr. Pudumjee.—Yes.

President.—As regards rags, you have to boil?

Mr. Pudumjee.—We have to sort them, chop them and then boil them. Then we wash and bleach them.

President.—Rags go through the whole of the normal process of pulp and paper manufacture?

Mr. Pudumjee.—Yes.

President.—What about gunnies?

Mr. Pudumjee.—Gunnies would follow the same process. Only they would not be used for white printing.

President.—It is only the quality of the finished paper that differs; otherwise the process is essentially the same?

Mr. Pudumjee.—Yes.

President.—What about your waste paper?

Mr. Pudumjee.—It is simply sorted and passed through a pulping machine. It is just the same process as imported pulp.

President.—But there is no boiling done?

Mr. Pudumjee.—Certain kinds only require boiling, the stronger kinds which do not easily disintegrate require boiling.

President.—It means you have to put them into a digester?

Mr. Pudumjee.—Yes. Then it is put through a kneader. But the bulk of it passes through the pulping machine without boiling.

President.—What exactly does it do?

Mr. Pudumjee.—It is simply a mechanical process for breaking it up. The kneaders break it up. There are bars and the material is beaten and kneaded. It is an attrition process. It does not destroy the fibre. It retains the original length of the fibre.

President.—Even on the rag the amount of chemicals that you require during the digestion stage would be considerably lower than what would be required in the case of grass or bamboo?

Mr. Pudumjee.—There is no doubt about that. We require hardly more than 5 per cent. of the weight of the material.

President.—In the case of gunnies you would have to use a larger proportion?

Mr. Pudumjee.—7 per cent.

President.—When waste paper goes into the digester?

Mr. Pudumjee.—If it goes into the digester, 1 to 1½ per cent.

President.—So that it would be misleading to compare your consumption of chemicals with the consumption of chemicals in an ordinary paper mill?

Mr. Pudumjee.—That is so.

President.—There is no basis of comparison?

Mr. Pudumjee.—Practically none.

President.—The same would apply to your consumption of bleach?

Mr. Pudumjee.—Yes, it would be much less. For instance, we use only 4 to 5 per cent. for bringing a very good colour on rags.

President.—The difference would be this. You make a very large proportion of inferior papers in your mills?

Mr. Pudumjee.—Yes, badamis.

President.—I mean ordinary badamis, and wrappings which come to 50 per cent. Naturally they are papers which consume less bleach.

Mr. Pudumjee.—And less chemicals.

President.—Then you use a fairly large proportion of bleached imported pulp?

Mr. Pudumjee.—Yes.

President.—Therefore there is no consumption of bleach on that part?

Mr. Pudumjee.—No.

President.—Then you use a considerable quantity of clean rags?

Mr. Pudumjee.—But still they do require bleaching.

President.—And where you get clean white paper shavings, that also would require less bleach?

Mr. Pudumjee.—Practically none; we don't even boil them.

President.—So that both from the point of materials and quality and finish of the papers that you make there is no comparison between you and the other mills as regards the bleach either?

Mr. Pudumjee.—No.

President.—The other thing is your coal consumption. You give your coal consumption as approximately 3.5 tons?

Mr. Pudumjee.—Yes.

President.—Since the amount of boiling that you have got to do is considerably less than the boiling required in a mill working from primary materials like grass and bamboo, your coal consumption also would be a somewhat misleading factor for purposes of comparison?

Mr. Pudumjee.—That is so. Ours should be lower.

President.—Where do you get your coal from?

Mr. Pudumjee.—From the Central Provinces.

President.—What kind of coal is it?

Mr. Pudumjee.—It is a fairly good quality steam coal, but inferior to second class Bengal coal.

President.—What do you pay at the colliery?

Mr. Pudumjee.—Rs. 4.5 at the colliery.

President.—What freight do you pay?

Mr. Pudumjee.—Rs. 6-10 on Central Province coal.

President.—That is the bulk of your coal?

Mr. Pudumjee.—We used to mix it with Bengal a year ago, but to-day it is all C. P. coal.

President.—That is practically Rs. 11 delivered at the mill?

Mr. Pudumjee.—Yes. This coal is about 15 to 17 per cent. inferior to second class Bengal coal. It is a quick burning coal and its consumption is 15 to 17 per cent. more for the purposes of steam.

President.—Is this 15 to 17 per cent. based on the results of actual working?

Mr. Pudumjee.—Yes.

President.—So that it is a combined result of the quality of coal and your power arrangement. Your boilers are old.

Mr. Pudumjee.—We do regulate our draft, etc., according to the coal consumed.

President.—You have used both classes of coal on the same kind of power machine and it yields a result in one case which is 15 to 17 per cent. inferior?

Mr. Pudumjee.—Yes.

President.—At present practically the whole of your plant is driven by steam entirely?

Mr. Pudumjee.—Just so.

President.—There is no electrically driven machine at all?

Mr. Pudumjee.—None at all.

President.—You say you have a proposal for installing a generator. Has it reached the stage of a definite scheme?

Mr. Pudumjee.—I have got the figures but we have not gone into it at all, because it is largely a matter of getting the necessary finance.

President.—What would be the total expenditure?

Mr. Pudumjee.—Rs. 1,50,000 about, I have got the specification with me.

President.—That is for a steam turbine and all the accessories?

Mr. Pudumjee.—Yes. That comes to about £10,000 c.i.f. Bombay. Then there will be expenditure on erection and so on of the boiler house which will be extra. It will be a steam turbine 700 to 800 h.p.

President.—Coming now to the question of materials, the point that I do not feel quite sure about is, suppose it was possible for you to work your output up to your present total capacity of 4,000 tons, would you be able to get sufficient quantities of waste paper and rags?

Mr. Pudumjee.—As regards rags, we can get twice as much as we are getting now.

President.—How do you know?

Mr. Pudumjee.—Because before the war we used to collect 800 to 900 tons of rags.

President.—In answer to question 49 you give a statement of the actual proportion of the various materials you require and rags, jute and hemp you say you would require about 750 tons. You were able to raise 800 tons of rags before the war in Bombay?

Mr. Pudumjee.—Yes.

President.—And on that account you do not anticipate any difficulty in raising the quantity now?

Mr. Pudumjee.—No I don't.

President.—What about waste paper? You require a fairly large quantity, about 3,500 tons?

Mr. Pudumjee.—Our present position is this. If we increase our production it will be all in white paper. We should not try to put in more of badamis because it will be difficult to find a market.

President.—On that assumption you have worked out these various figures with regard to the quantity of each kind of material?

Mr. Pudumjee.—That is only a simple multiplication because we thought you wanted to know what would be the reduction in cost per ton working as now.

President.—My point is somewhat different. Suppose you had to find sufficient materials for 4,000 tons of paper and assuming that the materials had to be obtained in the proportion you show in the statement, would you be able to actually raise them? Suppose you had to raise 3,500 tons of waste paper would you be able to get it?

Mr. Pudumjee.—We can raise up to 2,500 tons without difficulty. It would of course mean Rs. 5 to 6 per ton more.

President.—If you had to increase beyond 2,500 tons?

Mr. Pudumjee.—We will have to go longer distances and the freight would go up.

President.—I find that already, taking the relatively small quantities of these materials that you buy, the freight rates have gone up considerably since 1924-25?

Mr. Pudumjee.—That is so.

President.—If you take waste paper in 1924-25 your average cost at the mill was Rs. 41, your average cost at the mill was Rs. 61 in 1929-30; it has increased 50 per cent.?

Mr. Pudumjee.—Yes, but it depends on what quality we purchase. In the year 1924-25 we restricted our manufacture to inferior kinds of paper, browns, badami and so on, but since then we have improved the qualities of papers manufactured by us and therefore we have to buy better quality of waste paper.

President.—You would say that the whole of this increase in cost from Rs. 41 to Rs. 61 is to be accounted for by the superiority of the quality of the material purchased?

Mr. Pudumjee.—Yes, and also extra freight.

President.—You have not given us the exact figures: can you tell us that taking a particular kind of waste paper in 1924-25 and the same kind of material in 1929-30?

Mr. Pudumjee.—It is practically the same. On the contrary we have just recently reduced them.

President.—But you say you have had to go as far away as Madras?

Mr. Pudumjee.—That is only for a very small quantity and it only cost us slightly more. I will give you an instance. We buy white shavings in Bombay at Rs. 80 per ton; the freight from Madras to Bombay amounts to Rs. 40 per ton although it is a concession rate. Waste paper is a bulky material and one can't load it up to the full capacity of the wagon but the full capacity is charged on the basis of 11 tons, although the waste material that can be put in it amounts to 5 to 6 tons. The cost at Madras is hardly Rs. 50 or Rs. 60 per ton, so we get the material at Rs. 100 per ton. There are not many purchasers in Madras and therefore the cost of waste paper there is low. It costs us therefore only Rs. 20 more for good white shavings: that is specially clean shavings. That is what we have tried to get from Madras.

President.—Rs. 40 is an enormous freight. What is the distance from Madras to Bombay?

Mr. Pudumjee.—About 750 miles, and as I say it is a concession rate.

President.—Can't you pack waste paper compactly?

Mr. Pudumjee.—Unless they are full-pressed, but then they would be much more expensive. They are now hand-pressed, and even then the quantity which could be loaded in a 11 ton wagon is only 5 to 6 tons.

President.—If you want to get waste paper in quantities larger than you are getting now, it would be necessary for you to go further afield?

Mr. Pudumjee.—Yes, and the utmost we would have to pay by way of freight on quantities we want would be Rs. 5 per ton more. We will have to get these from South India, Belgaum, Dharwar and so on. It will not be very expensive. We would expand our areas within economical distances so that we would only have to pay Rs. 5 to 6 per ton more in freight.

President.—And the rest would be imported pulp?

Mr. Pudumjee.—Yes.

President.—You say you would be prepared to buy bamboo if available, but there is no area which is within reasonable distance of your mills. Have there been any surveys of areas in the Bombay Presidency?

Mr. Pudumjee.—Not much; on the Malabar side there has been.

President.—What about North Canara?

Mr. Pudumjee.—I don't think there is enough bamboo there to warrant a separate industry being started there.

President.—Has there been any consultation between you and the Bombay Forest Department with regard to the bamboo question?

Mr. Pudumjee.—No.

President.—They have not raised the question and you have not raised it either?

Mr. Pudumjee.—No. We could get it from Calcutta by sea. The freight would be practically the same as the freight from Europe, say, Rs. 30 to Rs. 35 per ton.

President.—If you take the Scandinavian ports, the freight on imported pulp would be about 35 shillings that is about Rs. 25 per ton.

Mr. Pudumjee.—Yes. The concession rate that is given to Calcutta mills from Calcutta to Bombay is about Rs. 36 per ton.

President.—So that it would be cheaper for you to get imported pulp by Rs. 10?

Mr. Pudumjee.—Yes, but the cost of manufacture of bamboo pulp should be cheaper than imported pulp.

President.—Supposing they were selling bamboo pulp, you could not expect them to sell it at a price lower than the price of imported pulp because obviously it would be sold in competition with imported pulp.

Mr. Pudumjee.—But they would have to deliver it at our mills at the same price as the imported pulp.

President.—In that case what it really means is this: to the extent they have to sell their bamboo pulp in competition with imported pulp—it is unlikely to be sold for a long time—taking the price of imported pulp landed at Calcutta it is very difficult for bamboo pulp to be made at a comparable cost.

Mr. Pudumjee.—Yes, in view of the present price of imported pulp.

President.—For practical purposes bamboo pulp may be dismissed as regards the Deccan paper mills as not a practical proposition.

Mr. Pudumjee.—Yes, for at least five or six years, we have no chance of getting it.

President.—If you look at page 3 of your written statement your ordinary badami is about 50 per cent. of your output.

Mr. Pudumjee.—Yes.

President.—How much of that do you sell to Government?

Mr. Pudumjee.—About 500 tons.

President.—For which you get a price corresponding to the protective duty.

Mr. Pudumjee.—About As. 2-9 per lb. which lower than white printings.

President.—Because the quality of the paper is inferior. What I mean is that Government gives you a price corresponding to the price of cheap imported paper plus the protective duty.

Mr. Pudumjee.—It is the cheapest wood-free paper which Government can get.

President.—Government would buy your ordinary badami on the basis of wood free price?

Mr. Pudumjee.—Yes.

President.—And wood free papers are subject to the protective duty.

Mr. Pudumjee.—Quite.

President.—Therefore the price that you get is the price that includes the protective duty.

Mr. Pudumjee.—I should not think so. Government cannot get their wood free paper for anything less than 2d. a lb. c.i.f.

President.—That is precisely my point too. If they get c.i.f. let us say for As. 1-9

Mr. Pudumjee.—They would not be able to get any wood free paper at that price. It would be at about 2 to 3 pies less than white printings.

President.—What is the lowest price of wood free paper corresponding to the badami?

Mr. Pudumjee.—To-day's price?

President.—Take last year's price.

Mr. Pudumjee.—I take it it is only about 3 pies less than white printings.

President.—That would be more than As. 2.

Mr. Pudumjee.—Yes.

President.—Shall we take it at As. 2?

Mr. Pudumjee.—A little more than As. 2.

President.—The cheapest wood free paper?

Mr. Pudumjee.—As. 2-2 per lb. c.i.f.

President.—Adding protective duty to that, it comes to As. 3-2.

Mr. Pudumjee.—Yes. Government are getting it at a very economical price.

President.—You are getting As. 2-9?

Mr. Pudumjee.—Yes.

President.—As. 2-9 is f.o.r. mills.

Mr. Pudumjee.—Delivered at their stores.

President.—In Bombay?

Mr. Pudumjee.—Yes. As regards the Controller's contract it is f.o.r. Bombay

President.—You sell partly to the Bombay Government and partly to the Controller.

Mr. Pudumjee.—Yes.

President.—Of the 500 tons how much did you sell to Bombay?

Mr. Pudumjee.—About half to the Bombay Government and half to the Controller.

President.—As regards Bombay sales it is free delivery at the stores.

Mr. Pudumjee.—Yes. As regards the sales to the Controller it is As. 2-9 f.o.r. Bombay.

President.—It is practically the same price.

Mr. Pudumjee.—Yes.

President.—What is the price *ex-mills*?

Mr. Pudumjee.—About $\frac{3}{4}$ th of a pie less.

President.—You get practically As. 2-8.

Mr. Pudumjee.—Yes, As. 2-8 $\frac{1}{2}$.

Mr. Rahimtoola.—All the paper required by Government is made in the Bombay mill?

Mr. Pudumjee.—No. Mostly it is made in the Poona Mills, also white printings, etc

Mr. Rahimtoola.—You have to pay freight back on that.

Mr. Pudumjee.—Badamies are not required in Bombay in large quantities. Mostly it is required in Yerrawada which is supplied from Poona direct. Let us say we sold about 300 tons of badami to the Bombay Government. It would be 225 tons delivered at Yerrawada and the rest deli-

vered at Bombay. We send all our white printings to Bombay and a small quantity to Yerrawada.

President.—When you supply to Yerrawada, what price do you get?

Mr. Pudumjee.—Same price less the freight, but we charge cartage from Poona to Yerrawada.

President.—As. 2-8 is roughly what you get at the mills for paper supplied to Government?

Mr. Pudumjee.—Yes, whether it is supplied to Yerrawada or Bombay.

President.—You don't give us here the figures of materials used in 1930-31 except for imported pulp.

Mr. Pudumjee.—I could give you the figures now. At that time our accounts were not audited.

President.—You give the total output of 1930-31 as 2,200 tons, is that right?

Mr. Pudumjee.—Yes.

President.—Out of that you made paper corresponding to 1,160 tons from imported pulp.

Mr. Pudumjee.—I would rather refer you to Form II, because it would be clearer there,—the percentage of paper.

President.—You get the percentage of paper and you don't get the quantity unless you do some arithmetic. May I take it the general position in 1930-31 was that half the quantity of paper was made out of imported pulp and the other half was made out of waste paper and rags?

Mr. Pudumjee.—Approximately it is correct.

President.—On your output of 1930-31 corresponding approximately to 2,000 tons, your imported pulp consumption represents 50 per cent. of the finished output.

Mr. Pudumjee.—960 tons.

President.—About 1,000 tons.

Mr. Pudumjee.—Yes.

President.—Then your total output was a little over 2,000 tons?

Mr. Pudumjee.—Yes.

President.—I am taking it on the basis of the finished paper yield from imported pulp and other materials.

Mr. Pudumjee.—Yes.

President.—On that basis the imported pulp represents 50 per cent. of the finished output for 1930-31.

Mr. Pudumjee.—Slightly less.

President.—You take the total quantity of finished paper. You take the yield of finished paper from waste paper, from rags and from imported pulp.

Mr. Pudumjee.—Yes.

President.—Work these out on that basis. Then you find that out of 2,200 tons of paper that you made in 1930-31, 1,000 tons of paper was made from imported pulp and 1,200 tons was made out of other raw materials.

Mr. Pudumjee.—800 tons from imported pulp.

President.—The figures do not tally.

Mr. Pudumjee.—Which figures do you mean please?

President.—Look at the answer to question 5. Take 1930-31. Your annual consumption of primary materials is 1,160 tons. You take a percentage of 85 and then you get a little over 1,000 tons.

Mr. Pudumjee.—Yes.

President.—Approximately it is half and half.

Mr. Pudumjee.—The difference is only 100 tons.

President.—If you are going to increase your output to 4,000 tons, that is to say, double your output of 1930-31, you would be able to make two-thirds of your finished output from indigenous materials. Is that correct? I am simply going on the figures that you give on page 39.

Mr. Pudumjee.—As I have explained, if we increase our production, it will be of white printings which will mean more imported pulp.

President.—Supposing you are able to get white shavings?

Mr. Pudumjee.—We cannot use all. We can hardly use more than 30 per cent.; otherwise the finished paper would not be sold in the market. We shall use two parts of pulp, one part of rags, and one part of broke retree, shavings, etc.

President.—You take the white printing paper that you make now. If you take the particular class of white printing paper that you make now, what is approximately the furnish of that paper?

Mr. Pudumjee.—It would be about 60 per cent. of pulp on the paper made.

President.—If you raised your output from 2,000 to 4,000 tons?

Mr. Pudumjee.—It will be by importing more pulp.

President.—What proportion of your total output of 4,000 tons would be white printing and white writing. At present you make about $\frac{1}{4}$ th.

Mr. Pudumjee.—Yes.

President.—500 tons out of 2,000 tons is your white paper.

Mr. Pudumjee.—I would make 1,500 tons of white printing and 500 tons of writings if we increased our production by 2,000 tons. We would also make certain quantities of superior badami which may be classed as white.

President.—So that if you doubled your output, then your output of white papers would increase more than proportionately.

Mr. Pudumjee.—Yes. In fact the whole increase will be in white printings and writings.

President.—That is a point that works rather against you. That is what I am trying to point out. If you increased your output on your present total capacity, your dependence on imported materials would be greater.

Mr. Pudumjee.—Yes, that is a fact that cannot be denied.

President.—Although you might be able to raise larger quantities of rags and larger quantities of waste paper, you would find it necessary to use larger quantities of pulp.

Mr. Pudumjee.—60 per cent. more of imported pulp.

President.—Even then would it come to 60 per cent. of imported pulp? You can dispense with imported pulp as far as the other classes of paper, e.g., badami and wrappers are concerned.

Mr. Pudumjee.—Yes.

President.—Let us assume that you are working up to a capacity of 4,000 tons. Out of that 2,000 tons is white paper.

Mr. Pudumjee.—Yes.

Mr. Boag.—2,500 tons would be white paper.

Mr. Pudumjee.—Yes.

President.—How many tons of imported pulp would you require for making 2,500 tons of white paper?

Mr. Pudumjee.—70 per cent. would be imported.

President.—That means if you made 2,500 tons of white paper, you would require about 2,000 tons of imported pulp.

Mr. Pudumjee.—Yes, about 1,750 tons or a little less.

President.—What you say here is you count upon using in future a quantity between 1,000 and 2,000 which is very different from 2,000 tons.

Mr. Pudumjee.—I don't quite follow.

President.—I am trying to state the case for assisting your industry from your own point of view. The larger your dependence upon imported materials the less strong your case is for assistance under the Fiscal Commission's conditions.

Mr. Pudumjee.—That is true.

President.—I am trying to suggest that if you worked up your output to your full capacity, it might not really be necessary for you to increase your consumption of imported pulp except proportionately.

Mr. Pudumjee.—Yes.

President.—But if it is going to be increased to this extent, then your dependence upon imported pulp would be rather a grave factor.

Mr. Pudumjee.—Unless we try to put in the market more of badamis and browns. These are not protected and therefore we can't compete with the foreign product.

President.—Why should you be protected?

Mr. Pudumjee.—We can get sufficient materials to manufacture badamis and browns. As far as our mill is concerned, situated as we are, for white printings we should have to depend more upon imported pulp than on indigenous materials.

Mr. Rahimtoola.—Your object in diverting your attention is mainly due to the fact that the ordinary badami and browns have reached their limit as far as the selling market is concerned.

Mr. Pudumjee.—Not that.

Mr. Rahimtoola.—What is the reason?

Mr. Pudumjee.—Mechanical pulp paper is forced on the market and is supplanting our badamis, so that we can't get a further market unless we cheapen our price.

Mr. Rahimtoola.—You mean you should go below As. 2-8.

Mr. Pudumjee.—Yes. Mechanical pulp is being sold at As. 2-2. As we have shown in our representation the Madras tender is lost to the Indian mills, and the Mysore tender is also lost to the extent of 40 tons. This year they got mechanical pulp paper for their requirements. The Baroda tender is lost to us too. They are now buying mechanical pulp paper through the Okha port which serves their object. That is how we stand.

President.—It comes to this that unless you sold your ordinary badami to the Controller of Stores or to the Bombay Government, you get a price which really corresponds to mechanical wood price.

Mr. Pudumjee.—Yes.

President.—Even in the case of sales to Government, you get a price which is rather less than the market price of wood free paper.

Mr. Pudumjee.—Yes.

President.—But in the case of sales to people other than Government you get a price which really corresponds to the price of mechanical wood free price. That is a lower c.i.f. price and a lower duty.

Mr. Pudumjee.—Yes.

President.—It comes to this that if you worked to your full capacity of 4,000 tons, about 50 per cent. of that paper would be represented more or less by imported pulp.

Mr. Pudumjee.—Yes.

President.—I notice you object to a duty on imported pulp.

Mr. Pudumjee.—Yes, that is natural unless bamboo pulp is available in India.

President.—Supposing we come to the conclusion that bamboo pulp is likely to be made in sufficiently large quantities on the Bengal side and in

order to encourage the development of bamboo pulp, it is necessary to provide bamboo pulp with a certain amount of assistance as against imported pulp.

Mr. Pudumjee.—Yes.

President.—And on that basis supposing for argument's sake we consider the question of a duty on imported pulp, you would object?

Mr. Pudumjee.—If it meant a higher duty on paper, then we would not object.

President.—Supposing your increase in the cost of manufacture was made up in the shape of a correspondingly increased duty on finished paper?

Mr. Pudumjee.—Then our position would be the same. We should not object. We would prefer to use bamboo pulp, because we would get it on the spot.

President.—Supposing we were considering the question of an import duty on paper which would cover the cost which is involved in a duty on pulp, how exactly would you suggest that the duty on paper should be calculated? Assume, for example, the duty on paper is going to be Rs. 100 a ton and suppose we consider that a duty of Rs. 20 a ton is required on imported pulp, what do you think should be the corresponding increase of the duty on paper?

Mr. Pudumjee.—It should be in the proportion of 85 to 100.

President.— $\frac{20 \times 100}{85}$

Mr. Pudumjee.—Yes.

President.—But then you are using only half the quantity of imported pulp.

Mr. Pudumjee.—Yes.

President.—You would need an increase of Rs. 12?

Mr. Pudumjee.—Yes, roughly speaking.

President.—From your point of view it would be worth while suggesting to the legislature, if it were possible at all, that although you are not in a position to use grass or bamboo there are other indigenous materials like rags, gunnies and waste paper of which you could make sufficient use and if it could be made out that your proportion of the consumption of these indigenous materials is sufficiently high then there will be little difficulty in bringing you within the scheme of protection.

Mr. Pudumjee.—As it is, we have shewn this.

President.—A little over 50 per cent. of imported pulp if you are working to full capacity would be rather a large proportion?

Mr. Pudumjee.—That is, if we increased our production. As it is we have shewn that our consumption of indigenous materials is considerably more.

President.—On your actual output of 1929-30, the imported pulp forms about one-third.

Mr. Pudumjee.—Yes. It is only in the case of increased production that we want 50 per cent. more.

President.—Considering the fact that at present imported pulp represents a third of your finished paper, supposing we gave you compensation in the shape of an increased duty on the basis that one-third of your paper was imported pulp, on the present position that ought to satisfy you.

Mr. Pudumjee.—On the present position, it should satisfy us, but not if we increased our production. Then, it would be 50 : 50 instead of one-third. At present the proportion is 33½ to 100. On the increased production it would be 50 : 50.

President.—There is a calculation that you make on page 46. There you calculate the measure of assistance that you require on the present basis.

Mr. Pudumjee.—Yes.

President.—The result of your calculation is that you require a little more than Rs. 140.

Mr. Pudumjee.—It is Rs. 46 per ton.

President.—You require Rs. 46 more; that is to say, in addition to the present duty of Rs. 140?

Mr. Pudumjee.—Yes.

President.—I am not objecting to your rates at all. But if you were working up to 4,000 tons.....

Mr. Pudumjee.—Then it would be less because our overhead charges would come down.

President.—Then Rs. 140 would be a little too high for you?

Mr. Pudumjee.—No.

President.—If your output was 4,000 tons instead of 2,000 tons, then a duty of Rs. 140 would give you considerably more than you need.

Mr. Pudumjee.—We will have to work out the figures.

President.—I will show you how it works out. You take your deficiency of 1929-30 which is Rs. 83,219.

Mr. Pudumjee.—That is correct.

President.—Assume your output was 4,000 tons instead of 2,000 tons. Per ton the deficiency would be Rs. 21 or Rs. 22.

Mr. Pudumjee.—It does not come like that.

President.—Suppose your output was 4,000 tons instead of 2,000 tons, the deficiency which would have to be made up per ton would be less than half.

Mr. Pudumjee.—Just so. It would be Rs. 26 then.

President.—It would not be Rs. 26. Your Rs. 46 has been arrived at on the basis of 1,793 tons.

Mr. Pudumjee.—True.

President.—I am taking 4,000 tons.

Mr. Pudumjee.—Supposing the deficiency remains the same, then we can divide it by 4,000.

President.—Rs. 46 you get taking 1,793 tons.

Mr. Pudumjee.—True.

President.—Suppose you take 2,000 tons, it would not be Rs. 46.

Mr. Pudumjee.—It would be less.

President.—It would be Rs. 41.

Mr. Pudumjee.—Yes.

President.—Supposing instead of 2,000 tons it was 4,000 tons, Rs. 20 would be your deficiency?

Mr. Pudumjee.—Yes.

President.—You have calculated that if you worked up to 4,000 tons your works cost would come down by Rs. 19.

Mr. Pudumjee.—Yes.

President.—A duty of Rs. 140 would suffice on that basis?

Mr. Pudumjee.—Yes.

President.—In 1929-30 your imported pulp cost you Rs. 30 more?

Mr. Pudumjee.—The price of paper has fallen in sympathy.

President.—Not entirely. The price of imported pulp has come down in a slightly larger proportion?

Mr. Pudumjee.—I should not think so. It used to be £18.

President.—What was your price of imported pulp in 1929-30?

Mr. Pudumjee.—We can give you the average figure. The maximum was £18.

President.—Taking the kind of bleached pulp that you use?

Mr. Pudumjee.—It was £18. To-day it is £13-10.

President.—That is a fall of £4-10.

Mr. Pudumjee.—Yes.

President.—Was it £18 or £19?

Mr. Pudumjee.—£18. The fall comes to about 5½ pies per lb. The price of paper has dropped in sympathy.

President.—I do not know the price of paper. Taking the realised prices of Calcutta mills for 1929-30—I am thinking of the leading mills of Calcutta—their average realised price was about 3 annas 6 pies. Their average realised price in 1930-31 was 3 annas 4 pies.

Mr. Pudumjee.—Including all kinds and the Government prices. If you take the market price for white printing, it was 3 annas 10 pies to 3 annas 11 pies and is now 3 annas 4 pies to 3 annas 4½ pies. It is practically the same drop as pulp.

President.—Of course all the figures that we have seen suggest that while both imported pulp and paper have come down considerably, the price of imported pulp has come down probably in greater proportion.

Mr. Pudumjee.—I don't think so.

President.—What is your average realised price in 1930-31? You have not got figures for 1930-31, have you? We have got your 1929-30 figures. Can you tell us?

Mr. Pudumjee.—It is higher because we have made more white printings than badami, but the margin of profit has been the same.

President.—On the basis of your production in 1930-31 you can take it that what you have saved on the cost of imported pulp is a net saving.

Mr. Pudumjee.—But the prices have dropped. We get the average price higher because we have made a larger quantity of white printings. We have to compare each separately—I mean the price of badami realised and the price of white paper realised separately during each year.

President.—Can you tell me approximately during the current year what is the proportion of imported pulp you are using?

Mr. Pudumjee.—We have given you figures.

President.—You bring the figures up to 1929-30, but I want later figures.

Mr. Pudumjee.—We have given here 1,160 tons.

President.—In 1929-30 you used 740 tons and your total output was 1,775 tons.

Mr. Pudumjee.—Yes.

President.—In 1930-31 you used 1,160 tons of imported pulp and your total output of paper in 1930-31 was 2,200 tons. Therefore your general proportion of imported pulp remains fairly stationary.

Mr. Pudumjee.—Yes.

President.—Therefore if you have saved in the cost of imported pulp, it must be counted as a saving.

Mr. Pudumjee.—As I say the prices that we have realised are lower in proportion.

President.—You have now said that it is higher.

Mr. Pudumjee.—If you take the average, not individually.

President.—Yes, if you take the average realised price?

Mr. Pudumjee.—You will see that we have used 400 tons more.

President.—But there is a corresponding increase in your output of paper and your average price has gone up.

Mr. Pudumjee.—The proportion of pulp used was a little more too.

President.—In calculating your total expenditure we must take the proportion of your imported pulp to the total output.

Mr. Pudumjee.—Just so.

President.—Therefore if your realised price has gone up.....

Mr. Pudumjee.—The proportion in 1930-31 was a little more than in 1929-30.

Mr. Rahimtoola.—Will you please look up page 25? You will see that the average price realised in 1924-25 you give as 2 annas 6½ pies.

Mr. Pudumjee.—Yes.

President.—In 1929-30, it is 2 annas 9 pies. Therefore the price has gone up.

Mr. Pudumjee.—Not if you take the individual kinds. The average price has gone up because more white paper was made than badami. The price of printings was 3 annas 10 pies and it dropped to 3 annas 6 pies. As regards writings, it was 3 annas 10 pies and dropped down to 3 annas 8½ pies.

Mr. Rahimtoola.—How do you account for 2 annas 9 pies then?

Mr. Pudumjee.—Because we have made a larger quantity of white printings than badami. This is the price realised for all kinds of paper.

Mr. Rahimtoola.—In spite of the fact that printings form a smaller quantity compared to badami.

Mr. Pudumjee.—Yes.

President.—Could you kindly prepare a note for us and send it to us later on showing your average realised price taking all classes of paper for the year 1930-31, the actual quantities of each class of primary material used in 1930-31 and the total output of 1930-31. Of course you have given us the total output, but in order to complete the statement you might also give it there. Also give us the average price of imported pulp landed at the mills in 1929-30 and the corresponding figure for 1930-31?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—I would ask you to refer to your reply to Question 1 (d). You say that the superior management of the Company is entirely in Indian hands.

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—It has been so since the beginning?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—Even before the amalgamation?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—Have you found any difficulty in the working of the mills because of the superior management being in Indian hands?

Mr. Pudumjee.—So far as we can see, none.

Mr. Rahimtoola.—What is your position in the Company?

Mr. Pudumjee.—I am the Managing Director.

Mr. Rahimtoola.—Before amalgamation, the two companies were more or less rival companies?

Mr. Pudumjee.—They were so to speak.

Mr. Rahimtoola.—At present you are maintaining two offices?

Mr. Pudumjee.—We have our principal office in Poona. We have a branch office in Bombay.

Mr. Rahimtoola.—Is the office in Bombay more or less the Sales Department?

Mr. Pudumjee.—The Sales Department, the Purchasing Department and that sort of thing. It is a sort of branch office doing all sorts of work.

Mr. Rahimtoola.—The amount which you paid to Messrs. Pudumjee and Company was Rs. 4,25,000?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—Which you turned into fully paid up shares at Rs. 500 per share?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—And that is the reason why your capital was raised from Rs. 5 lakhs to Rs. 9,25,000?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—You say that the present beating capacity of your two mills with three machines is 4,000 tons?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—May I know what is the reason for your producing only 2,124 tons? What is the present difficulty in getting your maximum output?

Mr. Pudumjee.—It is a question of marketing our paper at competitive prices. We are unable to compete.

Mr. Rahimtoola.—You are not able to compete as far as browns and badamis are concerned?

Mr. Pudumjee.—Quite so.

Mr. Rahimtoola.—As far as white printings and writings are concerned, your intention for the future is to increase your output. So I take it that you must have considered the chances of selling them before you make a statement of that character?

Mr. Pudumjee.—True.

Mr. Rahimtoola.—Your difficulty lies in the sale of badami and browns?

Mr. Pudumjee.—Yes, and there are financial difficulties as well in increasing our production.

Mr. Rahimtoola.—You want more working capital?

Mr. Pudumjee.—Yes. We have now to a certain extent provided for it, and we are gradually increasing our production.

Mr. Rahimtoola.—You state here that in the 2,124 tons you have not included wrapping paper?

Mr. Pudumjee.—That is so. It is a small amount.

Mr. Rahimtoola.—It is 13 per cent. of the total?

Mr. Pudumjee.—90 tons or so at the most.

Mr. Rahimtoola.—I take it according to your statement in answer to Question 11 that you have no objection to using bamboo pulp if it is available?

Mr. Pudumjee.—That is correct.

Mr. Rahimtoola.—Have you seen bamboo pulp?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—Have you tried it?

Mr. Pudumjee.—No, but from the experience of other mills we have formed some idea about it. As it is made now it would be quite suitable for our use.

Mr. Rahimtoola.—Even if you used bamboo pulp you would still require a certain proportion of imported wood pulp, would you not?

Mr. Pudumjee.—Yes. Bamboo has got a certain amount of mellowness in it, and it requires to give a little snap in it by a mixture of imported sulphite pulp.

Mr. Rahimtoola.—Coming to your answer to Question 18, are you at present using Indian China Clay?

Mr. Pudumjee.—No. We are using foreign China Clay.

Mr. Rahimtoola.—Is there any difficulty as regards Indian China Clay?

Mr. Pudumjee.—No. They have improved the quality, but it is the freight that is against us. There is no China Clay within economical distance of our mills.

Mr. Rahimtoola.—Is the freight prohibitive to permit of your using the Indian material?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—I take it your principal market is Bombay for sales?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—Who are your keenest competitors, the imported paper or the other mills?

Mr. Pudumjee.—Foreign imported paper as well as the Indian mills.

Mr. Rahimtoola.—Which is the Indian mill which is really competing in Bombay?

Mr. Pudumjee.—Titaghur, Bengal and the India Paper Pulp Companies. They get concession freight rates as I have explained.

Mr. Boag.—In Bombay, or does the competition arise in the neutral markets to which you send your papers, like Delhi?

Mr. Pudumjee.—In Bombay, because of the concession freight rates.

Mr. Rahimtoola.—You don't get any freight concession from Poona to Bombay?

Mr. Pudumjee.—None, because there is not much competition on this line whereas from Calcutta to Bombay there is competition between the Railways, as also by sea.

Mr. Rahimtoola.—I find in your Form II as regards coal consumption you show a reduction in spite of the increase in output. In 1927-28 it was 3.28 and the total output was 1,251 tons and in 1929-30 it was 2.93 when the total output was 2,124 tons?

Mr. Pudumjee.—We expect a still further reduction if we can increase our production.

Mr. Rahimtoola.—And do you think there will be still further increase in production if you use steam turbine?

Mr. Pudumjee.—Yes. We might effect a saving of Rs. 25,000 to Rs. 30,000 a year.

Mr. Rahimtoola.—Has the scheme been put before the Board of Directors?

Mr. Pudumjee.—It has not been placed before them yet.

Mr. Rahimtoola.—In answer to Question 25 you point out the likely market which the Indian mills can capture in future and your idea is that 25,000 tons more is the maximum number of tons which the Indian mills can capture in future?

Mr. Pudumjee.—Yes, as they are at present equipped.

Mr. Rahimtoola.—That is as far as the present protected paper is concerned?

Mr. Pudumjee.—Yes.

President.—That is including 66 per cent. of the total imports of packing paper?

Mr. Pudumjee.—Just so.

President.—On what basis have you arrived at this percentage of 66?

Mr. Pudumjee.—It is only a rough estimate.

President.—Your 66 per cent. in the case of writing paper may be justified but 66 per cent. in the case of packing paper is much higher than any mill which is now making packing paper has ever considered safe to put forward.

Mr. Pudumjee.—As we have explained in a subsequent paragraph, this is a kind of paper which can be made from imported pulp, but it is not difficult to produce about 9,500 tons more of packing paper from Indian materials.

President.—The kind of paper that corresponds to the wrapping paper of the kinds which are made in India now, that represents a much smaller proportion of the imports than 66 per cent.

Mr. Pudumjee.—40 per cent., and that is because it does not pay Indian mills to make this paper at present. But we have enough material to produce it if we can put it on the market at competitive prices. We have got tons and tons of gunny and jute and waste paper going to waste.

Mr. Rahimtoola.—As far as your position is concerned, as I understand it, you have no objection to a duty on imported pulp provided there is a corresponding duty on finished paper?

Mr. Pudumjee.—That is so.

Mr. Rahimtoola.—And as far as your estimates are concerned, you want this duty to be anything above Rs. 140 per ton?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—You think that for your mill in order to exist the minimum duty with the corresponding increase of duty on imported paper should be Rs. 140 per ton?

Mr. Pudumjee.—That is right, just to keep us going.

Mr. Rahimtoola.—You don't think you are likely to make any economies in the future?

Mr. Pudumjee.—Yes. If we increase our production Rs. 140 would give us 8 per cent. dividend on our capital.

Mr. Rahimtoola.—Looking to the prices as they have come down. I personally don't think that Rs. 140 is a thing which you should demand; that is why I am asking you whether you contemplate any future economies.

Mr. Pudumjee.—As I have explained, we have effected considerable economies in coal consumption and by increasing our production we estimate that our overhead charges will be less per ton of paper. We will, of course, have to use imported pulp.

Mr. Rahimtoola.—As far as imported pulp is concerned you say that if you increase your output you will require 70 per cent. of your output.

Mr. Pudumjee.—For particular kinds of paper it would be about that.

Mr. Rahimtoola.—For whites and printings?

Mr. Pudumjee.—Yes.

Mr. Rahimtoola.—That is too much. You know perfectly well the conditions laid down by the Fiscal Commission and I don't see how a mill can justify protection when using 70 per cent. imported wood pulp.

Mr. Pudumjee.—As we have stated, the extra quantity of whites and printing that we would manufacture will need a little higher percentage of wood pulp, but the total quantity will be much less than 50 per cent.

President.—If you made 4,000 tons you would not be able to find a market for that unless 2,500 tons of that was white paper, and in order to get that 2,500 tons of white paper you would need 70 per cent. of imported pulp? That is more than 50 per cent. of your total output.

Mr. Pudumjee.—It is slightly less than 50 per cent. Our total output would be 4,000 tons and the total quantity of pulp that would be used would be 1,750 tons.

President.—This 70 per cent. is 70 per cent. of the total quantity of materials required for 2,500 tons of finished paper?

Mr. Pudumjee.—What I mean is 70 per cent. of pulp would be actually needed. For manufacturing 100 tons of white printing paper we would use 70 tons of imported pulp.

Mr. Rahimtoola.—Can you give us the latest price of sulphite easy bleaching wood pulp?

Mr. Pudumjee.—The price of bleached pulp is £13-10 c.i.f. Bombay.

President.—What is the latest price for strong sulphite?

Mr. Pudumjee.—About £10 c.i.f.

Mr. Rahimtoola.—According to you this price is not stationary; it is due to overproduction and trade depression. What would you consider the average price? Do you think that this price is likely to remain for a long time?

Mr. Pudumjee.—For a couple of years at least; I should think. What information we gather is from the paper trade journals.

Mr. Rahimtoola.—But you have quoted very extensively from them basing your answers on that. You have based your scheme of protection on those statements?

Mr. Pudumjee.—We have only proved that the present prices are low not because the cost of manufacture is low but owing to overproduction.

Mr. Rahimtoola.—Is it not a fact that you rely on those statements and you want the Tariff Board to take a note of it?

Mr. Pudumjee.—That is quite true.

Mr. Rahimtoola.—But you now say that those statements are unreliable?

Mr. Pudumjee.—What I say is that we can't judge from what they say how long this state of affairs will continue.

Mr. Rahimtoola.—In answer to Question 31 you say "The prices at which the products of our mills have been sold at up-country centres generally correspond with those in places in the vicinity of our factory making due allowance for freight to destination". What exactly do you mean by that? Do they take delivery at your mills?

Mr. Pudumjee.—No. Our price is f.o.r. Bombay *plus* freight to destination.

Mr. Rahimtoola.—If you sell in Poona it is the f.o.r. price?

Mr. Pudumjee.—In Poona we get a slightly higher price.

Mr. Rahimtoola.—You send a certain quantity of your finished paper to Madras also?

Mr. Pudumjee.—Not much. It was just a small quantity to Bezwada and Madras.

Mr. Rahimtoola.—You are now complaining about keen competition due to the unprotected paper coming in. May I know exactly what your proposals are in that connection to protect your paper?

Mr. Pudumjee.—The idea was to protect newsprintings only. Badamis are not required for newsprinting and these should be protected. As a matter of fact all coloured papers should be protected whether they contain mechanical pulp or not.

President.—The precise suggestion that you make is that the percentage should be increased to 75 per cent. of the fibre content. That is going to bring within the protective duty genuine newsprint used by the various leading newspapers in this country. The difficulty is going to be a practical difficulty. Where exactly are you going to draw a line in order that the badami is protected and genuine newsprint is going to be left out?

Mr. Pudumjee.—Our idea is that all coloured printings whether they contain 75 per cent. or not should be protected.

President.—If it is 75 per cent., most of the genuine newsprint will come within the protective duty?

Mr. Pudumjee.—That is true.

Mr. Rahimtoola.—According to you the Tariff Board will not be able to carry out its object because you said the object of the Tariff Board of 1925 was to exclude newsprint. If your proposal is accepted, namely, 75 per cent., which according to you would give you adequate protection for your ordinary badamis and browns, it would also include newsprint. We want to know how you want to make a proposal which would exclude newsprint as you understand it and as you yourself thought the Tariff Board of 1925 wanted to exclude?

Mr. Pudumjee.—By excluding all paper from protective duty which contains more than 75 per cent. mechanical pulp.

Mr. Rahimtoola.—Have you got any other suggestion to make except the one you have already made by which you can protect the paper you make and at the same time exclude genuine newsprint?

Mr. Pudumjee.—Badami and coloured printings should be protected. Only small quantities of coloured papers are used for newsprinting and these might be imported under license, if possible. Only papers like the *Jam-e-Jamshed* import light coloured newsprinting paper for distinctive purposes. I mean only the large printing presses require these light coloured papers for newsprinting purposes.

President.—If you say that coloured printings are liable to the protective duty and newsprint is not, it is very difficult for the Customs to make the necessary distinction. How could Customs make this distinction between coloured printings and newsprintings. Newsprintings are white. They are very seldom coloured. The colour itself is a distinction. Supposing there are vernacular journals or cheap vernacular books which are printed on coloured paper in which there is a very large percentage of mechanical pulp?

Mr. Pudumjee.—I should think they ought to be protected as the consumption is small. It is only the newspapers that should be excluded.

President.—Your suggestion is that the Tariff Board in 1925 wanted to leave out newsprint in the sense of paper used by newspapers. That is not correct. What the Tariff Board intended in 1925 was to leave out of the protective scheme paper which was so cheap that it would be impossible for Indian mills even with a protective duty to make it at comparative prices. It was really on the question of mechanical content in the newsprint that they left it out.

Mr. Pudumjee.—Our impression is that it was left out because of the newspapers.

President.—It is a mistaken impression. There is nothing in the report to suggest that.

Mr. Boag.—I should like to ask you one or two questions about your balance sheet. If you refer to your answer to Question 41, you give the block value of your property as something like Rs. 11 lakhs.

Mr. Pudumjee.—Yes.

Mr. Boag.—That is without deducting any depreciation. If you refer to your balance sheet for the year ending March, 1930, the actual block value of your property as it now stands is about Rs. 8½ lakhs.

Mr. Pudumjee.—This is without any depreciation.

Mr. Boag.—Strictly speaking, I think you should have given in your answer to Question 41 the depreciated figure.

Mr. Pudumjee.—I am sorry.

Mr. Boag.—Your capital is Rs. 9,25,000.

Mr. Pudumjee.—Yes.

Mr. Boag.—Your Company has been making a profit for a few years.

Mr. Pudumjee.—Yes.

Mr. Boag.—But you have not declared any dividend?

Mr. Pudumjee.—No.

Mr. Boag.—What have you done with your profits?

Mr. Pudumjee.—It is being absorbed in the additions that we are making to our machinery and plant, as well as in stocks and outstandings. Then, we are increasing our sales and production, much of the capital is being absorbed in stocks and outstandings. We want more working capital and the profit is being utilised for that purpose.

Mr. Boag.—Can you tell me what your profits have been for the last five years? It is about Rs. 1,50,000, I think, since 1926-27.

Mr. Pudumjee.—Rs. 1,21,000 in the last four years.

Mr. Boag.—In answer to Question 39 I see that excluding the new paper machine which is Rs. 1,09,173, you spent about Rs. 1,00,000 on additions to your plant.

Mr. Pudumjee.—And machinery.

Mr. Boag.—So that practically all your profit has been absorbed in that way.

Mr. Pudumjee.—Yes.

Mr. Boag.—I see in your balance sheet a reserve fund of Rs. 62,000.

Mr. Pudumjee.—Yes.

Mr. Boag.—Is that in your plant?

Mr. Pudumjee.—It is in our stocks and outstandings.

Mr. Boag.—How do you manage for working finance? You live on these loans and deposits?

Mr. Pudumjee.—Just so.

Mr. Boag.—That is really your difficulty?

Mr. Pudumjee.—Yes, our principal difficulty.

Mr. Boag.—That is the real reason why you can't work up to your full capacity.

Mr. Pudumjee.—In a way it is.

Mr. Boag.—Have you tried to obtain additional capital?

Mr. Pudumjee.—Yes, but the rate of interest demanded at present is rather high.

Mr. Boag.—Just at the moment it is out of the question. In the past few years did you make any attempt to raise additional capital?

Mr. Pudumjee.—Additional capital is out of the question. It is difficult to get even loans, as we are not showing a larger margin of profit and people are chary of advancing.

Mr. Boag.—You have not been able to obtain even any loan?

Mr. Pudumjee.—No.

President.—Even if the duty is continued, the difficulty with regard to working finance will remain.

Mr. Pudumjee.—If we can show a fair margin of profit, it is very easy to get working finance.

Mr. Boag.—In order to do that you must work to your full capacity and in order to do that you must obtain additional capital.

Mr. Pudumjee.—We are improving our position. I think we will be able to declare a small dividend this year.

Mr. Boag.—You still contemplate additions to plant?

Mr. Pudumjee.—Yes, that will be by raising a loan or by debentures.

Mr. Boag.—You are not going to utilise your profits in that way any longer?

Mr. Pudumjee.—It would not be enough, because we require a large amount for putting up a new beating plant, and a power plant. Capital will have to be raised.

Mr. Boag.—How much working capital do you consider that you need as you are working at present?

Mr. Pudumjee.—About Rs. 7 to 8 lakhs.

President.—You surely do not need the whole of it. How much working capital would you consider necessary including what you have now? Supposing you are working on an output of 2,200 tons, what kind of working capital would you require on an average to carry you through?

Mr. Pudumjee.—We have stocks worth Rs. 5,00,000. We have got outstandings—Rs. 1,25,000. At least Rs. 6 lakhs is involved in this.

President.—That is an extraordinary position. You make about 2,000 tons. You get an average price of Rs. 400. That means about Rs. 8 lakhs.

Mr. Pudumjee.—Yes.

President.—In other words you want the works expenditure of the whole year.

Mr. Pudumjee.—Because we have stocks of materials and paper stocks worth about Rs. 5,50,000.

President.—We have never seen so high a proportion of working capital suggested by any of the other mills. If you want working capital corresponding to your works expenditure for the whole year, it amounts to Rs. 8 lakhs. There is something wrong somewhere.

Mr. Boag.—Your works expenditure is only about Rs. 7 lakhs.

President.—The working capital they require is more than that.

Mr. Pudumjee.—We have outstandings Rs. 1,25,000 and stocks Rs. 5 lakhs.

Mr. Boag.—Are your stocks in any way abnormally large?

Mr. Pudumjee.—Paper stocks are a bit more—about Rs. 30,000 or Rs. 40,000 more than usual.

Mr. Boag.—Why is that? Have you not been able to dispose of it?

Mr. Pudumjee.—We have to keep stocks for the Controller of Stationery and for the Bombay Government. There are certain stocks which could not be easily disposed of in the market.

President.—Where do you show your stocks and stores?

Mr. Pudumjee.—It is in the balance sheet.

Mr. Boag.—In answer to Question 50 you give us the average value of your stocks of finished paper as Rs. 1,76,000, nearly a lakh less than what you show in the balance sheet.

Mr. Pudumjee.—These are averages.

Mr. Boag.—Your figure for this particular year is nearly a lakh above the average.

Mr. Pudumjee.—Yes. Our production has increased—about 100 per cent.

President.—The largest part of your working capital is locked up in materials?

Mr. Pudumjee.—Yes, because we have got to keep a large stock of pulp. This year we have Rs. 80,000 worth of pulp.

President.—I suppose your waste paper and so on you have got to collect long in advance.

Mr. Pudumjee.—That is true. We are getting them in different kinds.

President.—Can't you arrange to purchase the waste paper from the contractor say a month before you want it?

Mr. Pudumjee.—It is not possible. They have to be collected.

President.—Whenever they collect and bring it, you have got to take it.

Mr. Pudumjee.—Yes, and stock it ourselves. These people have to get a license from the Municipality for storing waste papers, which is not an easy matter in Bombay.

President.—That is the essential difference between your position and the position of the manufacturers who use grass and bamboo. Unless you collect it whenever it is offered, you can't get it?

Mr. Pudumjee.—That is true.

President.—There is one point about your Managing Agency. Who are your Managing Agents?

Mr. Pudumjee.—N. Pudumjee and Company.

President.—How exactly do you arrive at this remuneration of Rs. 31,600? That includes head office expenses?

Mr. Pudumjee.—Yes. That has been fixed.

President.—It is fixed at that amount by agreement?

Mr. Pudumjee.—It is almost fixed by an arrangement.

President.—How is the commission arranged? On what basis?

Mr. Pudumjee.—10 per cent. on the profits.

President.—Before depreciation?

Mr. Pudumjee.—After depreciation.

Mr. Rahimtoola.—Nett profits?

Mr. Pudumjee.—Yes.

Mr. Boag.—If you do not declare any dividends, they don't get any commission.

Mr. Pudumjee.—No, but the remuneration is fixed.

President.—What do you mean by "remuneration"?

Mr. Pudumjee.—That is Rs. 22,000.

President.—Commission is fixed on the basis of 10 per cent. on the nett profit after depreciation and everything else?

Mr. Pudumjee.—Yes.

President.—In addition to that there are the head office expenses to meet.

Mr. Pudumjee.—Yes.

President.—On what basis is this fixed?

Mr. Pudumjee.—Actual expenses.

President.—How do you get this figure of Rs. 31,600?

Mr. Pudumjee.—Head office expenses and the Agents' remuneration.

President.—What is the remuneration?

Mr. Pudumjee.—Rs. 22,000.

President.—Rs. 22,000 is the head office expenses or Agents' remuneration?

Mr. Pudumjee.—Remuneration.

President.—As far as I understand the Managing Agents' charges divide themselves into two groups: First, all the expenses which are properly incurred and the other is the commission or the remuneration. This Rs. 31,600 includes, you say, an amount of Rs. 22,000 which is the commission paid to the Managing Agents.

Mr. Pudumjee.—It is not a commission. It is a fixed amount given to them.

President.—That is their remuneration?

Mr. Pudumjee.—Yes.

President.—In addition to that Rs. 22,000, are they entitled to get a commission on the nett profit?

Mr. Pudumjee.—Yes.

President.—You get your head office expenses, you get fixed remuneration and in addition to that 10 per cent. on the nett profit.

Mr. Pudumjee.—Yes.

Mr. Boag.—Do the Managing Agents hold a large number of shares?

Mr. Pudumjee.—More than half, about Rs. 5 to 6 lakhs.

Andhra Paper Mills Company, Limited, Rajahmundry.

A.—WRITTEN.

(1) *Letter No. 1723/31, dated the 9th May, 1931.*

We acknowledge receipt of your communication No. 226/P.-16, dated the 30th April, regarding the Bamboo Paper Industry (Protection) Act, 1925. We have the pleasure to state our views as below :—

1. We have taken over the management of the Carnatic Paper Mills Limited, Rajahmundry, in May, 1929. Since then we have had to fight against many defects in machinery to put it into operation since the same has never been operated upon. In the written representation of the Carnatic Paper Mills Limited given to you during your enquiry in 1925, they represented that they could not give you any details owing to their not commencing manufacture. For many reasons the company has not started operations from 1925 till 1928 when it had to go into voluntary liquidation. During this period of five years the machinery was not tried and tested and hence we had a lot of uphill work to overcome and this necessarily delayed our operations till the earlier part of the year 1930.

2. Regular manufacture of paper from Bamboo has commenced only in April, 1930. You therefore notice that we have had only one year's experience and during this short time at our disposal, we are glad to inform you that we overcame an innumerable number of technical difficulties in the manufacture of bamboo paper. Of the many, the first and foremost of our difficulties was bleaching. After spending enormous sums of monies, we have bleached bamboo pulp suitable for making white paper. There are still certain minor difficulties in bamboo pulp-making and paper-making which we have arranged to rectify as soon as we have sufficient finances in our hands.

3. If the manufacture had been started before we took management we are confident that we would have come to a stage of efficient manufacture by this time and still it is a piece of consolation that we have brought Bamboo Pulp and Paper Industry from a state of vagueness and indefiniteness to a state of surty and of assured future; there is now no doubt about its success and if done on a larger scale, there is no doubt about its economical manufacture that would enable this industry to compete itself favourably with the imported Paper and Paper Pulp.

4. We have gained sufficient experience to prove to the Board that if the Government are prepared to give us a further protection, we would surely make this Industry stand on its own feet without further protection. As it is, our output is small and this does not allow us to minimise the costs of production. Still under these circumstances, we have brought down the costs of production far below our expected estimate and hope to reduce it further to compete with the imported pulp and paper with a few more alterations and concessions for which we request—

- (1) The Tariff Board to grant us a further period of protection.
- (2) The Government for fresh subsidies and concessions in the matter of granting—
 - (a) Leases of large areas of bamboo forests at considerably cheaper rates than the amount to which they are offered to the public.
 - (b) Subsidies in the form of loans to enable us to purchase fresh machinery.

5. We wish to bring to the notice of the Board that we have crossed over the main difficulties which the Board has found during its enquiry in the year 1925 (*vide* page 24, paragraph 37, last three lines in their report) that the bamboo paper has not the same strength as fibre made from Sabai grass. We sent a few samples of our paper manufactured from purely Indian bamboo to the Officer in charge of the Paper Pulp Section, Forest Research Institute, Dehra Dun, to be certified as to their strength in comparison

with the paper of other Indian Paper Mills. The report we had from him justifies that our paper is extra strong and that due to bamboo pulp (an extract of the Report is herewith submitted).

6. We are also very glad to inform you that our paper from bamboo has been considered the best in the Indian market in competition with other brands of writing papers that are imported from abroad. The only defect we have is the low outturn which always consumes a very large working capital in proportion to the very high figures in mills abroad.

7. The chemicals that are used for the manufacture of pulp and for bleaching the same have always been a serious handicap for the Indian manufacturer owing to the necessity to import them from abroad, and to the frequent fluctuation in their prices. During the short time at our disposal we had to modify and alter the present soda method to cut down the costs. In bleaching also as above mentioned we have been forced to alter the ordinary method of using bleaching powder to using bleaching solution prepared from liquid chlorine. Our financial position has not allowed us yet to further cut down the costs by the introduction of electrolytic bleach which we wish to introduce eventually.

8. We wish to assure the Board that Bamboo has attracted the attention of the paper trade world and in a short time with the help of further protection, the Bamboo Pulp and Paper Industry would be stabilised and there will be a greater outturn shown to such an extent as to completely remove the necessity of importing Chemical Wood Pulp from outside. The Board has in their Report rightly viewed the point and if our anticipations come out successful, we will be in a position to supply our bamboo pulp to foreign countries. All this is possible if the Board would see with us that further protection is necessary till we can stand on our own feet, after which we need no more help from the Government.

9. Besides, we had one difficulty to contend against during this short period of our existence, the general and World-Wide Trade Depression. Money came in scarce and every Mill has had its share of short time work. This is the case with many of the biggest British Mills abroad with huge resources of finances at their credit. In spite of this we strove hard to fight our way to make this infant Industry a success.

10. Please permit us to point out that our Paper Machine has facilities in its original design for manufacturing M. G. Kraft Papers. These papers have not been manufactured in India, as the manufacture of this requires a special type of Paper Machine called the "Yankee" Machine, the glazing being effected by pressing the paper web whilst in a wet state against a specially ground and polished drying cylinder of large dimensions. We request the Board will realise that it is essential for a mill operating in this country to have a substantial line of Brown or slightly bleached paper to resort to, especially during the monsoon when owing to the muddy waters brought down by the river during floods, the proposition of making white paper would be a costlier job. In the circumstances referred to, the Board will appreciate the importance for this company and grant protection for all classes of M. G. paper, Wrappings, Kraft paper, Envelope paper, Poster paper, etc., in natural brown, white and coloured varieties.

In conclusion, we wish to state that if we have sufficient protection for this Industry and sufficient help from the Government we have every confidence that we can—

- (1) cut down the cost of bamboo,
- (2) minimise the consumption of chemicals,
- (3) increase the outturn of pulp and paper,
- (4) give an extra polish thereby increasing the demand for our paper for more uses than what it is at present, as we have now offers for such papers from very large consumers of paper,
- (5) produce pulp at a cheaper rate than what we are now manufacturing.

We have now given in general our views why we need your protection and take this opportunity to thank the Board and the Government for all the concessions and protection granted to us all these five years. If you will kindly send us the questionnaire as mentioned in your communication, we will substantiate our views by facts and figures at our disposal in the short period of one year's operation under our management.

Thanking you for the opportunity given to represent our views and awaiting the favour of your help and protection to stabilise this nascent industry which has a very good future not only in consideration of the Indian Paper Mills but in view of its assured possibility of replacing wood pulp in the world's pulp market.

From

M. P. Bhargava, Esq., M.Sc.,

Officer in charge of the Paper Pulp Section,

Forest Research Institute, Dehra Dun.

Comparative statement of bursting strength of samples of paper sent.

Foolscap paper weight.	Titagur Mills.	Bengal Paper Mills.	Naihati Mills.	Andhra Paper Mills.
6 lbs.	19	13	17	21
8 „	19	18	...	24
10 „	14	...	16	19

(True extract.)

For the Andhra Paper Mills Co., Ltd.,

Assistant Manager.

(2) Letter dated the 30th June, 1931, from the Andhra Paper Mills Company, Limited, Rajahmundry.

We are submitting herewith our replies to the questionnaire. The other papers will be sent to you later.

Enclosure.

Replies to the Questions.

1. (a) The Andhra Paper Mills Company, Limited, is a public registered company. It is registered in January, 1929.

(b) It is registered in India and the capital is in rupee value. Its capital was Rs. 10,00,000 originally and now raised to Rs. 20,00,000.

(c) The entire capital invested in our company is held by Indians. All the Directors are Indians.

(d) The Managing Agents are Indians. The Pulp Mill-in-charge and the Chemist of the Mills is an Indian trained in our Mills since its original start in 1920-21. There is one foreign expert working in the mill.

There is practically no change in these respects since 1923, except that the original company, the Carnatic Paper Mills Limited, has gone into voluntary liquidation in 1928 and the present company took charge of the same in 1929.

2. The total capacity of our mills is as follows:—

(a) 10 tons of Bamboo Pulp.

(b) 5 tons of Paper for a day of 24 hours.

3. The total output of the mills for the year 1930-31 is 131 tons of paper nearly.

4. Varieties of Paper.	Total outturn in tons.	Percentage.
Printings nearly	39	30
Writings nearly	55	42
Azure nearly	1	1
Blottings nearly	3	2
Badami and Brown nearly	26	20
Coloured wrappers nearly	7	5
	<hr/> 131	<hr/> 100

5. Our outturn has been very low for the whole year and as such the following are the approximate quantities used by us for the year 1930-31:—

	Tons.
Bamboos	About 120
Wood pulp	95
Jute Waste	6½
Rags	3½
Elephant grass	1
Paper cuttings	25

6. Our primary raw material is only Bamboo, with an admixture of Wood pulp and paper cuttings. We estimate that bamboo will yield about 45 per cent. when converted into pulp and about 42 per cent. when converted into paper. As for wood pulp the yield of paper from it would about 86 per cent. taking on a. d. basis. In the case of paper cuttings, we can take 80 per cent. to 85 per cent. yield.

7. We have no reason to vary our opinion regarding the availability of the primary raw materials. There is a great field and there are innumerable forests yet to be tapped, we confirm therefore our opinion expressed during the last Tariff Board Enquiry. Regarding the suitability of bamboo we confirm by actual manufacture that bamboo is suitable for a very high class writing and printing papers and that it would in a short time replace chemical wood pulp which has been the staple raw material for the manufacture of paper all over the world.

8. (a) Since the starting of the operations we have been obtaining bamboos from the same forest through contractors. These are drawn from the Gokavaram forests.

(b) As the contractors supplied us bamboos we have never undertaken their collection and transport. It is generally done by labour who cut and collect bamboo on a contract basis. The contractor pays the labourers sometimes and the other times the labour pays the amount. It is then conveyed to the mill-site by double bullock-carts similarly on contract basis. The contractors' man waits at the mill to receive the bamboos and then hands them over to the mills' authorities by number and by weight.

(c) As we have not been financially able to get into long term contracts with the Government or Zamindars who own forests, we did not get into any concessions as yet but we hope to do so in a short time.

90. We are unable to give any detailed information on this subject as we have not yet undertaken the extraction of bamboo from the forests. We have been taking small quantities at a time from the local contractors who have been charging us about Rs. 160 per 1,000 bamboos which amounts to Rs. 26-10-8 or nearly Rs. 27 a ton on a. d. basis. The lowest price we paid for bamboos is Rs. 120 per 1,000 which amounts to Rs. 20 a ton.

Taking a general case of ordinary bamboos from Polavaram Estate which is about 20 miles from Rajahmundry and the forests at about 6 miles from the river the charges for 1,000 are as follows:—

	Amounts.
	Rs.
Seigniorage	15.
Cuttings and conveying charges to the river bund station	60.
Conveying charges by river in rafts	5
Other charges	6
Conveyance from river to Mills	3
	—
TOTAL	99
	—

Per ton at $2\frac{1}{2}$ tons per 1,000 Rs. 35-9-0.

10. The rates we are paying at present are the normal rates which are charged to all. These are very high indeed when considered on the basis of a large industry. As we have not yet arranged to get these in large quantities, we have not yet applied for concessions for the rates. We are paying the following rates at present:—

Railway freight paid on—

	Rs. A. P.
1. Caustic Soda	25 0 0 a ton.
2. Sodium sulphide	25 0 0 „
3. Bleaching powder	27 5 0 „
4. Liquid chlorine	4 13 0 per cyl. of 68 lbs.
5. Rosin	24 0 0 a ton.
6. China clay	42 0 0 „
7. Alum	21 4 0 „
8. Broke	27 0 0 „
9. Coal	8 14 0 „

11. (a) There are, as you are aware, two processes for pulp making and one of them the sulphite process is tried in the Naihati mill. Our plant was originally designed for the Soda process. We manufactured large quantities of bamboo pulp by the Soda process and had then two difficulties confronting us, the question of the cost of chemicals and the colour of pulp after washing. Then we used the sulphate process which has given us a better yield estimated from our laboratory experiments (in our opinion). We also tried the fractional system under instructions from the Forest Research Institute, Dehra Dun, and after a series of experiments in all the possible ways of pulp manufacture we arrived at a stage of cutting down the cost of pulp making to an irreducible minimum. Our method embodies mostly the principles of sulphate digestion with a few modifications taken from the fractional digestion and we now believe that the cost of chemicals has come down to a very low figure than what we are expected in the beginning.

(b) Our mill has been designed primarily for the manufacture of bamboo pulp and our estimate given to the Board in the year 1925 was based on a thorough enquiry being conducted as to the sources of bamboo from the Godavary agencies. In the short time we have worked, we did not face any difficulty about the supply of bamboo. The enquiry was mainly directed towards the cost of getting bamboo from the Rekapalli Reserves to which we have been looking forward as the main source of supply of bamboos.

As soon as we started operations we called for quotations and the figure ran as high as 160 per 1,000 bamboos or Rs. 27 per ton of raw material delivered into the mills. Working it out we found that the cost of bamboo pulp came to a very high figure and so we have to start enquiries as to the supply of material at economic price. We therefore went upland towards the Gokavaram forests and obtained bamboo at Rs. 120 per 1,000 or Rs. 20 per ton delivered in the mills. The bamboo selected is the *Dendrocalamus strictus* and a part of *Bambusa Arundanacia*. The above cost is what we pay to the contractor for free delivery into the mills. We have hopes that with the further conditions we anticipate from the Government and the greater outturn we are looking forward to produce in future and in consequence the greater number of bamboos used for pulp manufacture we are confident of reducing the value to a minimum of Rs. 100 per 1,000 or Rs. 17 per ton. This is based on actual workable estimate if we get the bamboo from the Gokavaram forests, etc., which have a splendid road service within a short distance of 15 or 20 miles from the mills.

Mr. Master the District Forest Officer who has been deputed by the Government of Madras to investigate into the possibility of getting bamboos cheaper from the Rekapalli forests, etc., has stated in unmistakable terms that the bamboo can be delivered in the mills at Rs. 18 per ton if the mill financed a large squad of cutters and rafters and conveyers from the reserves on the bank of the river Godavary. This rafting and conveying is to be done from a distance of nearly 30 to 60 miles from the mills and that during particular period from October to June avoiding the rainy season when the river is in floods. There is also the possibility of getting down the cost of bamboo to Rs. 15 per ton as given by Mr. Raitt but conditions under which the same can be obtained are different in a degree. However our present figure of Rs. 20 is not far above this sanguine estimate. Our future hope of Rs. 18 per ton is just same as Master's estimate whether the bamboo exploited is from the Rekapalli forests or Gokavaram forest.

(c) Regarding the question of coal consumption per ton of pulp it is given severally by different mills as ranging from 2 tons to 4 tons per ton of pulp. In a mill like ours where we manufacture not only pulp but paper we cannot definitely state how many tons of coal is consumed in our mills per ton of pulp manufactured. The same coal supplies steam to the digester as well to the paper machine. The power that is used is also general as the engine that operates beaters, etc., will also operate the wash tanks, etc. The total consumption of coal as we have experienced so far has been thus:—

6 tons of coal per ton of paper when the pulp and paper mill are in full working condition. 4 tons of coal per ton of paper when the paper mill is only working. 2 to 4 tons of coal per ton of pulp when the pulp mill is only working. But on the average we have estimated as 3 tons of coal required per ton of pulp but this is also subject to variation owing to the quality of coal used.

We have been looking forward for the possibility of getting our coal supply from the Talcher coal mines which is 486 miles by rail through the new line constructed near Cuttack. We have also obtained supplies from Singereni coal mines which are 187 miles by rail, and Jharia and Bengal coal mines which are more distant than these two by rail. This is the only serious handicap we have which increases our price of pulp manufacture but with the co-operation of railway authorities we hope to reduce the freight on coal but how much we cannot say at present. We have also a

proposal for installing another digester which when worked together with the present one will reduce the cost of coal consumption on an average when calculated on the aggregate of double the number of tons of pulp manufactured per week. We have also another proposal to introduce the exhaust steam of the mills into the digester which would eliminate a large quantity of consumption of steam.

(d) The cost of chemicals has as above stated been cut down to a possible minimum under the existing circumstances of the mill but as soon as we get right our recovery department which we had to alter and modify to suit our present methods of pulp manufacture and which we hope will be done in a short time we are hopeful that the same can be cut down to a minimum of 50 per cent. With the introduction of the most up to date recovery plant which we have under alteration we are confident that caustic soda can be produced at a cheaper rate. As stated in our written representation we have on hand the proposal for the production of Electrolytic bleach which will also add itself to the reduction of pulp cost.

We had a terrible difficulty in the question of bleaching by bleaching powder which has been a costly affair as we are to necessarily import it from abroad. The delay in the transshipment and the change of temperature in coming to India has reduced the strength of available chlorine from 35 per cent. to 15 per cent. on an average from a series of experiments. So we have been forced to try other sources and eventually we have settled now upon bleaching the pulp by a bleaching solution manufactured from liquid chlorine and assisted by a little quantity of bleaching powder. This has cut down the price of bleaching very low and with the production of electrolytic bleach we are confident of reducing it further.

(e) The quantity of paper in general produced in this mill is cheap writing and printings. We are now seriously contemplating a few more alterations in the refining of bamboo pulp and we have on hand a very large number of orders for high class bonds which anticipate to manufacture from bamboo pulp. The quality of bamboo we are using is good if not the best. The colour of our pulp is comparatively better in whiteness from the soda pulp and the process of bleaching has been a success and so with a little more refining of pulp we are confident that we can produce a very good quality of paper.

We have at present another proposal to instal another paper machine equipped with all the modern appliances and also a set of super calendars after which we are anticipating the manufacture of very highly polished high class loans and bonds.

(f) As above stated we have undertaken the modification of our digester to suit our special methods of pulp making and we are now proposing to instal another digester we have now on hand a thorough alteration of the recovery plant to suit our special case. These we are estimating will cost us nearly 2 lakhs of rupees. The proposed idea of using few more strainers and refiners will not incur a great expenditure, and it might be about Rs. 50,000 to one lakh of rupees. The other alterations in the matter of installing an electrolytic Bleach plant which by itself will cost us about 2 lakhs of rupees, so the alterations we have undertaken and which we propose to undertake will be finished with a small outlay of five lakhs of rupees. The new paper machine will bring the fixture to a maximum of 10 lakhs.

(h) The total capacity of bamboo pulp is 10 tons per day of 24 hours and with the modifications proposed it might work up to 15 tons a day.

(i) But unfortunately the various alterations in the machinery erected for soda process when altering to suit our new methods as entailed a lot of waste of time and hence during the first year of our manufacture we could not produce more than 55 tons. This small output is due to the insufficiency of certain pieces of machinery and when once the alterations are finally made as soon as we are financially able to make the necessary alterations and also to erect the new paper machine we look forward for a production of 15 tons of bamboo pulp and paper per day.

(7) As above stated we are now getting enough raw material from the Gokavaram forests and with the Rekapalli reserves we are hoping to get from the Government of Madras under a reduced Seigniorage. We have enough raw material round about this mill and within short distances and we never imagine the possibility of shortage for bamboo.

12. The quality of wood pulp imported is "Udenholm" from Norway. The same is got from London firms and their quotations are always c.i.f. Cocanada. The price we paid is £15 a ton c.i.f. Cocanada. The quality of pulp imported is bleached white "U. S. I." extra strong; landing charges amount to Rs. 15 a ton, transport charge to Mill is Rs. 5 a ton.

13. As we commenced manufacture since one year we cannot say what would be the quantity of wood pulp we might be importing next year but we are trying to bring this figure to a minimum.

14. As at present we do not need any wood pulp owing to our pulp mill capacity being 10 tons a day and the capacity of our machine is 4 tons a day. We intend to instal another machine of 10 tons capacity. When it is completely fitted up, we would then be manufacturing 14 tons of paper per day. Under these circumstances we would be needing a maximum of 1,000 tons of wood pulp a year to make up the deficiency in pulp making and to cope with the maximum output of paper on the two machines.

But at present we need a few tons of wood pulp to make the difference between the number of tons of paper manufactured and the number of tons of pulp cooked.

15. There has been a tremendous reduction in the price of wood pulp and this is attributed to the world's trade depression. It has been brought to our notice that Norway and Swedish pulp mills are underselling their pulp for reasons due to competition and trade depression. We believe that the low prices cannot continue long as all Industries anticipate better times, we believe that prices of wood pulp would rise. By how far and in what time we cannot say at present.

16. The raw material for us is mainly bamboo and hence we never made any serious attempt at finding another raw material around the vicinity. The only next raw material we have been thinking of is the Elephant grass which we expect to be useful as an addition to the bamboo pulp but our investigations are not yet complete on the subject to give any idea about its cost and output, etc.

Incidentally we tried a few lots of jute waste for colour paper and a few tons of cut rags (tailors' cuttings) but owing to the want of dusters and breakers we could not proceed further to develop on this side.

17. The prices we pay for the chief auxiliary materials which we are using now are as follows:—

	Rs.	A.	P.	
Caustic Soda	12	10	0	a cwt.
Sodium sulphide	8	2	0	,,
Bleaching powder	8	0	0	,,
Liquid chlorine	23	11	0	per 68 lbs.
Rosin	324	6	3	a ton.
Alum	5	5	0	a cwt.
China clay	45	0	0	a ton.

These prices are ex-godown of the firm supplying to which we have to add the railway freight. The following are the quantities that we are using for one ton of finished paper.

The quantities of auxiliary materials required for ton of finished paper are as follows:—

Caustic Soda	About 6 cwt.
Sodium sulphide	3½ "
Bleaching powder	1½ "
Chlorine gas	90 lbs.
Alumina ferric	2 cwt.
Rosin	1 cwt.
China clay	2 cwt.

(NOTE.—We would like these figures kept confidential.)

18. As to the Auxiliary materials these are readily available in India whether they are Indian made or imported from abroad. As our consumption is very low we are confident that this can be supplied to us in large quantities whenever needed. We are at present using the following chemicals which are imported from abroad:—

- (1) Caustic Soda.
- (2) Sodium sulphide.
- (3) Bleaching Powder.
- (4) Liquid chlorine.

We have made enquiries regarding these if they are made in India; until now, we could not find a firm manufacturing them on an Industrial basis.

The following chemicals are available in India and in our opinion they do not match unfavourably with imported varieties:—

- (1) Rosin.
- (2) Alum.
- (3) China clay.

We are given to understand from the various sources from which we get our supply of the above chemicals that these are available in large quantities enough to meet our own requirements.

19.

FORM No. III.

	Quantity of material used.
	Tons.
Grass	<i>nil.</i>
Bamboo	120
Other local fibres—	
Rags	3
Jute waste	6½
Elephant grass	1
Total indigenous fibres	130½
Imported pulp	95
Broke	25
China clay	21
Total—	
(1) Quantity of material used	225½
(2) Finished paper, white	95
Coloured paper	36

20. (a) We have not employed labour in extraction and collection of primary materials.

(b) Our total labour force employed by us in 1930-31 is as:—

Supervisors—

- 1 Paper Maker.
- 1 Chemist.
- 1 Pulp Mill Assistant.

Engineers—

- 2 Engineer Mechanics.
- 1 Electrical Engineer.

Power supply—

- 2 Engine Drivers.
- 6 Oilmen.
- 12 Boilermen.
- 3 Workshop.
- 9 Electrical Operators.

Skilled labour 48.

Finishing Department 65.

Stores—

- 1 Store-keeper.
- 3 Assistants.
- 3 Lascars.

Miscellaneous 30.

Daily labour about 15, varying according to the works' conditions.

21. The following is the Wages Bill paid to the workmen as noted in question 20 during the year 1930 Rs. 3,000 per month approximately.

But you will notice the whole labour as stated in our answer to question 20 has not been kept thus all over the year. This represents the labour as employed on the works when the mill was working 24 hours. At other times they have been employed in other departments or discharged according to the conditions of the work.

22. Between 1923-25 we had three foreign experts in charge of construction of the mills. We had Mr. Venkajee, a chemistry graduate of the Madras University working under these three experts. We sent him to Dehra Dun to work under Mr. Raitt, F.C.S., M.I.Chem.E., for specialising in pulp paper technology where he acquired a good technical and mechanical working knowledge in Paper Pulp section. He was then sent by the Madras Government for special training in paper manufacture to Great Britain where he learnt all the details of working a paper mill from the preparatory to finishing department. We employed him as our chemist since his return. He is now in complete charge of pulp and chemical departments and finishing departments. He has also assisted us on the paper machine.

We have with us two young men one in the beater room trained as beaterman. He is a matriculate from the Benares University. The other is a student of Mechanical engineering who is assisting us in pulp making. We are on the look but for a few assistants more to learn work of the paper machine.

23. So far as we have had no chance to concentrate on housing our labour. We have one good bungalow for European labour and a few sheds temporarily erected for ordinary outside labour and when that was not sufficient, we rented a house to accommodate them. We are anxious to build a series of small houses for our own labour which we hope to do in a short time.

There is an association existing in our mills as Andhra Paper Mills' Association which is started chiefly to promote education amongst the labour and also to look after their needs and grievances socially and economically.

24. There has been no change in the supply of power since we started the mills. We are trying to instal more motors to make the various pieces of machinery work by electricity which will be cut down our costs proportionately.

The source of power since the starting of the mill till now is for steam:—

(1) Erie-City Boiler.

(2) Three British Niclause Water Tube Boilers.

Power:—

(1) Nordberg Engine of 200 H.P.

(2) One Flatman's variable speed engine for running the paper machine.

(3) We have installed one 77 H.P. motor and 1-150 K. W. Generator.

25. The total Indian production of paper is somewhere about 40,000 tons per year. While the Indian demand is approximately 1,74,000 tons including paper of all kinds; 40,000 tons of these are old newspapers and 20,000 tons are wrappers. These wrappers are not made in India till now but we can manufacture about 1,000 tons of these as we have got a special cylinder on our machine and we would gladly manufacture these provided there is a special duty on these M. G. Krafts, else it would not pay us. After removing the quantity of paste boards, newspapers, and paper of special kinds there will still be about 40 to 50 thousand tons of paper which Indian mills can manufacture if sufficient and direct help is given by the Government to the Indian mills to increase their outturn.

26. We hold the same opinions regarding the future prospects of bamboo as potential raw material. When sufficient mills are established for pulp making, India will consume all her pulp. Beyond this a day will come at a future date when India might export bamboo pulp to foreign countries in place of wood pulp.

27. Our position in this respect is this: bamboo pulp is costing us more than the imported wood pulp, owing to the extraordinary low rate at which this is dumped into India. The mills manufacturing bamboo pulp are still labouring under a disadvantage of low outturn which compares very unfavourably with the same in Norway and Sweden.

Owing to the fact that wood pulp is let into India free of duty and to the very low price at which it is offered in India due to the world trade depression and other causes, there is a tendency in India to-day to increase the import of wood pulp. This encourages the manufacturer to try to lessen the production of Indian pulp and use as much as possible the imported pulp. This state of affairs are not at all advantageous to the development of bamboo pulp industry unless and until the Board levies a reasonable duty on wood pulp making its cost equal to the cost of Indian manufactured bamboo pulp, the Board would be losing their objective in encouraging bamboo pulp Industry.

Some might say that if duty is increased on wood pulp there is not sufficient scope for the Indian mills to manufacture all the pulp they need for the production of paper, that is manufacture in India to-day which is about 40,000 tons and if the Government levied some duty on wood pulp making its cost higher than what it costs to-day, the cost of manufacturing paper would rise very high. Therefore it is all very well for the manufacturer to get cheap imported wood pulp but that would not encourage the development of bamboo pulp Industry where it is the question of costs and when a mill works for profit there will arise the question of the cheapness of production.

It is only possible to increase the outturn of bamboo pulp by leaps and bounds when there is no cheaper raw material to be used. The Board should arrange things in such a manner as to make the manufacturer look for bamboo pulp or any other Indian pulp. It is only then that net-work of large bamboo pulp mills can be started. It is only when the outturn

of such mills is somewhere about 100 tons a day that the cost of production of bamboo pulp can be reduced and can have a possibility of competing with the imported wood pulp, it is only then the Indian manufacturer will be forced by necessity to tap the natural resources of India and when the country comes to that stage of producing bamboo pulp at cheaper rate than the imported wood pulp, then India can hope to be the nucleus of the world's pulp trade. It is only under these circumstances the Government are justified in their attempts to look into the possibility of developing the bamboo pulp Industry.

We therefore request the Board to investigate into this point of view, find out the average cost price of 1 ton of bamboo pulp and try to bring up the price of wood pulp to that figure proportionately increasing the duty on paper to make for the loss incurred by the manufacturer in not being allowed to use a cheaper raw material.

If the Board allows this state of affairs letting wood pulp free, the country may derive a few lakhs of rupees by way of extra duty on paper but simultaneously it is allowing an influx of wood pulp and stopping the progress of bamboo pulp Industry.

28. As our output is small, we have had no opportunity to study the import market for paper and hence we are unable to give any figures regarding this competition.

29. We are unable to submit any information on this subject as we have not yet created any up-country market for our paper.

30. We are unable to submit this information as our account books are under audit and the same will be submitted to you as soon as they are ready.

31. We have had not yet sufficient experience to send our paper to up-country markets. Further without low outturn, we had no necessity to look to up-country markets for our sales.

32. In this connection we have to state that we are not in a position to contrast our prices with those of the imported paper as our outturn is very small and hence our cost of production comparatively high.

33. We are not in a position to give evidence on this subject.

34. In view of our situation at Rajahmundry, competition with foreign imported paper is very keen at places like Cocanada and Madras. We presume that this might be due to these places being near the sea and hence have facilities for direct import and have nothing to pay towards railway freight.

35. There is difference between the paper made from bamboo and that from other indigenous materials. There is something inherent in the bamboo pulp that gives extra polish over other papers with the same calendering. There is possibility of manufacturing a highly glazed paper from bamboo. With proper adjustments, bamboo paper can equal a plate-glazed paper imported from abroad. Naturally therefore is the possibility of getting a high price for bamboo paper. When well calendered, bamboo paper can be mistaken to be a high class writing with good mixture of rags in it.

But now we are realising the same price as the paper from other materials.

36. As we have experience only for over one year, we are not in a position to say anything on this subject.

37. As we are placed we are unable to say anything on this subject.

38. As we have been working this mill regularly since one year only, we are unable to state definitely about any change in our process or the installation of any new plant.

The difference in our process for pulping bamboo is from Soda to Sulphate and in bleaching bamboo pulp we have introduced nothing new, beyond this that we have introduced chlorine gas in addition to bleaching powder.

Except the installation of a new 1,000 lbs. Hollander beater and also starting our new engine, Rustom Tandem Non-condensing Engine 450 I.H.P. We have not installed any new plant.

39. We have not done any specific extensions or alterations of plant and machinery except a few minor alterations to suit our needs.

40. We are now installing a new beater of 1,000 lbs. capacity and we are arranging to bring our new 450 H. P. Ruston Tandem Non-condensing Engine into operation. These are for the present to improve our power supply and also to bring the paper machine into working at full capacity.

We wish to get another paper machine, instal another chipper and a digester to work our pulp plant at full capacity. This necessitates our increasing other part of the machinery proportionately. All this needs further capital. If the Board is pleased to have the 10 lakhs recommended to us, we are anticipating to bring all these into reality in a short time. And with the protective duty on pulp and an increased duty on paper, we can assure the Board that we can make bamboo paper industry an established success.

41. There are no leases or concession granted either to the Carnatic Paper Mills or to us. As for the other items lands, buildings, plant and machinery and other assets we quote below an extract from the Balance Sheet of the Carnatic Paper Mills, Limited. From a perusal of this report it will be noticed that the following are the amounts as noted below :—

	Rs.	A.	P.
(b) Lands	18,142	9	0
(c) Buildings	5,10,798	9	10
(d) Plant and machinery	10,61,302	10	6
(e) Other assets	11,307	8	8
	16,01,551	6	0

In this connection we have to state that the whole mill of the Carnatic Paper Mills has been handed to us for a lump sum of Rs. 4,25,000. During the short period of our management we have spent only Rs. 39,317-3-4 towards the purchase of machinery, machine parts, etc. The other items of assets, etc., will be informed to you as soon as our Balance Sheet for the year 1930-31 is ready.

42. The capacity of our mill is—

- (a) 10 tons of bamboo pulp,
- (b) 5 tons of paper per day of 24 hours.

There are various factors affecting the construction of a new paper mill in the matter of—

- (1) The cost of site.
- (2) The strength of buildings.
- (3) The country from which the machinery is imported.
- (4) The expert supervision under which the erection is made.

Taking a hypothetical case for the construction of a paper mill of the same outturn as above under normal conditions of Trade, the buildings can be constructed at a gross value of 4 lakhs of rupees. It is very difficult to say how much it would cost to construct a similar mill like ours but an ordinary mill manufacturing 10 tons of pulp and paper from bamboo per day of 24 hours would require at least 25 to 30 lakhs of rupees.

43. In answering this question we submit that during these 1½ years of our management we have not yet started the operation on a regular and commercial basis and our manufacturing account has not been systematised and that we have been engaged on the question of manufacturing bamboo pulp and paper on an economic basis. During these trials of—

- (1) bringing machinery into working order,
- (2) altering and modifying our process of our pulp making, etc.,
- (3) trying to operate our paper machine at its fullest capacity,

we have had to stop the mill for a number of days at many intervals of time which accounts for the very low outturn of 131 tons of paper during the whole year.

Therefore we have not yet written off any amount for depreciation and the question of creating reserve fund is only a point for future consideration.

44. (a) As on 31st March, 1931, the paid-up share Capital ranking for dividends is Rs. 11,25,122.

This amount includes a commission (calculated on 40 per cent. basis) of Rs. 4,75,895 which has been allowed to the shareholders of the present company, who happened to be shareholders of the Carnatic Paper Mills, Limited (*i.e.*, a shareholder of the Carnatic Paper Mills, Limited, holding a share of Rs. 100 fully paid-up is asked now by us to pay only Rs. 60 to entitle himself to hold one share of Rs. 100 in the Andhra Paper Mills Company, Limited).

Thus you will find that though the share capital of our firm ranking for dividend is Rs. 11,25,122 the actual amount received by the Andhra Paper Mills Company, Limited, in cash is only Rs. 6,49,227 against capital.

(b) In 1930-31 the company worked at a great loss to bring the problem of the manufacture of bamboo pulp and paper to this stage of success. The actual figure of net loss will be submitted to you later on and hence we have had no opportunity of declaring any dividend.

(c) There is only one class of share which ranks for dividend equally.

45. Our Balance Report for 1929-30 is enclosed herewith and also the Statutory Report for the same year.

46. The Carnatic Paper Mills, Limited, has borrowed an amount of Rs. 5,93,469 from the Government of Madras under the State Aid to Industries Act at an interest of Rs. 6 per cent. In full satisfaction of the debt the Government of Madras have accepted an amount of Rs. 4 lakhs which was paid by this Andhra Paper Mills Company, Limited, on 10th June 1929.

At present there is no mortgage debt to any one by this company.

47. We will be glad to submit these figures as soon as our audit is finished.

48. As our audit is still going on, we regret we are not in a position to submit this information.

49. As we have started our work since one year we are unable to say anything on the subject.

50. We have worked only for one year on a sort of commercial basis and this year's accounts are under audit and as such we will be able to submit these figures as soon as the audit is finished.

But we have generally carried stocks sufficient for nearly two months' consumption and our outstandings would be about Rs. 5,000 roughly during the period of manufacture.

51. There is no commission due to the Managing Agents during the time the mill is not working any profits.

The total amount spent towards the Head Office for this year 1930-31 is roughly Rs. 5,678. This amount includes the salaries for the office staff as the mill office, the Head Office and the registered office of the company are one and the same.

52. In answering this question we have every confidence that bamboo has come to stay as a staple raw material for the manufacture of paper. The Board is aware of the fact that all the Paper Technologists are predicting a shortage of wood pulp owing to the long time taken for the growth of the timber and to the development of cities and towns in the regions of forests and also for the extra uses to which the timber is subjected now-a-days. We reiterate the comparative advantages of bamboo mentioned by the Board in their report, *vide* item No. 38. Our experience of bamboo for the last few years has been in the direction of establishing the Board's conclusions.

There had been many shortcomings in the selection of sites for bamboo paper mills. The Board has discussed at length the usefulness of starting the Indian Paper Pulp Company at Naihati owing to its long distance from the source of raw material. The Board has also touched upon the distance of coal from the Andhra Paper Mills Company, Limited, but for this, our mill is ideally situated, very near the raw material, abundant supply of bamboo, pure water always available in the river Godavari and not far from the market of Madras. Having gone through the natural advantages of these two mills in their situation, we wish to impress upon the Board that bamboo has passed the stage of experiments and is now generally accepted by all as a commercial proposition. The Titaghur mills have been using bamboo in their No. 2 mill and are producing large quantities of bamboo pulp regularly and converting the same into paper. Since the recommendation of the Board the Naihati mill have installed their second paper machine and are on their way for developing bamboo pulp industry.

The Board has been assured, as stated in their report, that bamboo pulp making by the Sulphite process is a success and the Board was not then quite sure if the same on Soda Process would be a success as experimented by the experts at Dehra Dun. Since the time we have taken charge of this mill we have shown in unmistakable terms that the Soda Process is a success. The initial difficulties that were in the way of bamboo pulp making have gradually been eliminated. We have spent nearly 18 months' time to arrive at this stage of success and to-day we have the confidence to assure the Board that our method as is in practice to-day in our mills which is a slight alteration of the ordinarily accepted conditions of bamboo digestions is a success and yields better pulp. The Kankinara Mill we hear is using the soda process. These mills which have large financial backing, have renovated their old machinery by new ones and spent large sums of money for these alterations with the belief that they can tap the natural resources of India to an advantage not only to themselves but to the Industrial regeneration of India by making India the Sweden and Norway of the East.

We have had hard time during these months for operating the various pieces of machinery and bringing them to a working order. We have also been obliged to spend large sums of money in getting over our initial difficulties.

As every pioneer institution in the world has to face great many difficulties in its earliest stages of development, so are we now placed at a disadvantage in spending large sums of money in a sincere attempt to make this bamboo pulp industry a real success. We have yet to go in order to make this successful enterprise an economic success. We thank the Board for the protection which has given us a very great encouragement to go on with this warfare. So far we have succeeded in cutting down the costs of manufacture. But owing to the inadequacy of machinery and insufficiency of finances, we could not improve the conditions better which we hope to expect as soon as we arrange for finances to improve our machinery.

We would like to draw the attention of the Board to item 143 of the report and point out that we had the protection, but it was impossible for us to raise extra capital in this state of world trade depression. Had we been favoured with the Government guarantee of capital of Rs. 10,00,000 we would have been in a position to alter our machinery in order to increase our output of pulp and paper and thereby reduce the cost of manufacture. We have been seriously handicapped in this respect as our machinery is not very adequate and our paper machine is not sufficient to turn out enough paper to make our both ends meet. In fact we have been running our mills at a great loss simply for the sake of establishing a world-wide industry of bamboo pulp and paper which is of great national importance to India. We have great hopes that we can reduce the cost of production to an irreducible minimum which figure can beat those of the other mills owing to the specially advantageous situation in which we are; very near the raw material, the labour is available at all times of the year and it is cheaper than elsewhere.

This being the only mill at present in Southern India we have ample market for paper; it would be a great consolation for us if we can supply the whole market of Madras in its demand for paper. We are also considering the question of supplying our paper to the Madras Government. But in view of the very low outturn we did not venture. In view of these considerations and also in view of the great paper market we have in our Presidency, we have every hope that we can reduce the cost of our paper manufacture. But all these anticipations are subject to and dependent upon the future help of the Government of India by a continuation of the present protective tariff for a reasonably long period and also for a guarantee of the promised capital of Rs. 10,00,000. We were not able to raise any capital or even a loan at a reasonable interest as the public have been afraid that the protection might be removed after the end of the period and the question of reduction of cost was a problem for the would-be investor.

With the promise of the continuation of present protection and the guarantee of the loan by the Government, we would be able to command a number of facilities decreasing the cost of production in all respects. Without these severally and as a whole we are afraid that the whole question of our existence would be at stake. Protection we need, capital is essential, else all our labour would come to nothing in view of the impending danger that would come to bamboo pulp and paper industry. What has been done all these five years by the Government by way of protection would amount to nothing if no further adequate protection is granted. If a positive and direct encouragement is not given to us at this critical point of our existence when we look for a brighter and hopeful avenue of success economically and industrially as the pioneers in the bamboo industry in the whole paper trade world on one side and with a dismal gloomy future of a network of failures without Government support in the proper time when it promises to be the nucleus of a grand industry which not only makes India self-sufficient but saves the world from an impending calamity of a famine for future supplies of pulp for the manufacture of paper which is only an index of civilization, we are afraid that this will be the closure of the bamboo pulp and paper industry. Then it may be that a day might come when other nations in the tropical regions where bamboo is grown in abundance might start this bamboo industry, and that successfully, after taking lessons from the Indian Paper Mills which have to succumb to unavoidable and unfortunate circumstances, and we will be left to look at them prospering with the initial and spade work left to the poor Indian mills.

Under these circumstances, therefore, we appeal to the Board to view this Industry with a sympathy and try their best to give us every direct encouragement to make us prosper and not to throttle us at the end of five years after having allowed us to taste a bit of the wholesome and bright future.

53. Regarding the protection to be granted we are of opinion that it should be continued not for a short term of five years but should be for a reasonably long period to attract the would-be investing public and to give them the confidence that during the period of protection there is the possibility of utilising their monies for the installation of more machinery for increasing the output of the mill and for reducing the cost of manufacture and also to make up the loss sustained by us during the period of eighteen months to bring the bamboo pulp industry to the state of success. The period should be long enough so as to serve as guarantee for the price of paper and in our opinion it should be at least 15 years, so that during this period we might be able to—

- (1) make up our loss slowly,
- (2) renovate our machinery,
- (3) add one or two additional pieces of machinery in our pulp department,

- (4) add a new paper machine to increase our output,
- (5) to alter the preparatory plant of the paper section proportionately to the increased output.

We, therefore, request the Board to recommend to the Government of India, the continuance of the present Tariff for a period of 15 years.

We beg to submit to the Board that under the circumstances above stated we will be able to manufacture M. G. Kraft Paper on our present machine which is of the Yankee type and best suited for this sort of paper. This we propose to do as soon as we put in a new machine which will be reserved specially for white papers. This would give us nearly about 1,200—1,500 tons a year. We have also the possibility of using the cheap raw material, the elephant grass, into which possibilities we are investigating, besides there is the flood season during the months of July and August and also a part of September when the river water is muddy and requires an expensive and elaborate treatment for settling and purifying the same. Owing to these circumstances and also to the special advantage we have in the paper machine we have in our mills and which is not found anywhere in the Indian Paper Mills, we wish to assure the Board that we can manufacture all the M. G. Kraft Papers that are now being imported into India and request the Board to recommend for the same duty to be levied on this class of paper as is done in the case of white paper.

We also request the Board to levy duty on the imported wood pulp in order to make the price of wood pulp equal to the price of pulp manufactured from indigenous raw materials (*vide* our answer to question 27). We suggest to the Board to recommend a particular duty on wood pulp to counter-balance the extra cost in the manufacture of Indian Pulp and also a proportionate increase in the duty on writings and printings to make up the difference in the cost of production of paper from the costly Indian Pulp and the cheap imported pulp. In this connection we beg to draw the attention of the Board to an article published in the Madras Papers under date 6th June, 1931, wherein the public are complaining about the less genuine Indian Paper manufactured from the imported foreign pulp. We leave this matter to the Board to decide the—

- (1) Cost of pulp making in India.
- (2) Duty to be levied on imported pulp.
- (3) Extra duty to be levied proportionately on writings and printings.

In the end we wish to point out to the Board that the Board should realise that the real encouragement to bamboo pulp and paper industry lies in completely stopping the import of foreign pulp. We also wish to reiterate the immediate necessity of granting us the guaranteed loan of Rs. 10,00,000 from the Government of India (*vide* our answer to question 52) without which we are afraid we will not be in a position to raise any fresh capital to increase our outturn, thereby decreasing the cost of production of bamboo pulp and paper which is the ultimate goal of this enquiry by the Tariff Board.

FORM XXIV.

STATUTORY REPORT.

THE INDIAN COMPANIES ACT, 1913.

(See section 77.)

Statutory Report of the Andhra Paper Mills Company, Limited, Rajahmundry.

The Directors report to the members as follows:—

1. The total number of shares allotted is 9,370 of the aggregate nominal value of Rs. 9,37,000.

2. Of the said shares—

- (a) The number allotted subject to payment in cash is Rs. 9,370. All these shares have been only subscribed for and allotted to the shareholders of the Carnatic Paper Mills Company, Limited, in liquidation and a commission of Rs. 40 on each share is allowed as provided in the Prospectus and Article No. 37 of the Bye-laws of the Company.
- (b) The number of shares allotted as fully and partly paid up otherwise than in cash is *nil*.
- (c) The number allotted as partly paid up otherwise than in cash is *nil*.

3. The total amount of cash received by the Company in respect of the shares allotted subject to payment therefor in cash is Rs. 6,61,930 including commission as stated in 2 (a) allowed to the shareholders of Rs. 3,74,800.

4. The Receipts and Disbursements of the Company on Capital Account and otherwise up to 31st July, 1929, are shown in the statement subjoined to this report.

5. The following are the particulars as to the balance remaining in hand as on the said day of 31st July, 1929:—

	Rs.	A.	P.
Cash in hand	4,198	9	4
Postage stamps	23	0	6
Cash at the Bank—			
Imperial Bank of India, Rajahmundry	6,883	9	0
Indian Bank Limited, Madras	2,039	15	1

6. The preliminary expenses of the Company as estimated and shown in the Prospectus are Rs. 2,000 excluding brokerage and commission on shares. But as separately shown in the Disbursements side of the Receipts and Disbursements account herewith annexed a sum of Rs. 5,006-7 has been spent up to 31st July, 1929 on this account as per the particulars shown therein. It is expected that a further sum of Rs. 10,000 will be required for the same for covering the registration and stamp duty expenses for the sale deed of the mills from the Official Liquidator, and for other sundry expenses. The shareholders will appreciate the endeavours of the Directors and Managing Agents to minimise the preliminary expenses and that all expenses hitherto expended are unavoidable.

7. The following are the names, addresses and descriptions of the Directors, Auditors, Managing Agents and Bankers of the Company:—

Name.	Address.	Description.
-------	----------	--------------

Directors.

- | | | |
|--|-----------------------------------|-------------------------|
| 1. M. R. Ry. Mullapudi Timmaraju-garu. | Zamindar of Undraja-varam Tanuku. | Zamindar. |
| 2. M. R. Ry. Bulusu Butchi Sarvarayudugaru. | Kapileswarapuram | Do. |
| 3. M. R. Ry. Dewan Bahadur Kommireddi Suryanarayana-murty Naidugaru. | Cocanada | Merchant and Land-lord. |
| 4. M. R. Ry. Mootha Krishnamurty-garu. | Do. | Merchant and Banker. |

Name.	Address.	Description.
-------	----------	--------------

Directors—contd.

- | | | |
|---|-------------------------------|--|
| 5. M. R. Ry. Bangaru Raghavayya-
garu. | Rajahmundry | Merchant. |
| 6. Chodey Chinnayagaru | Ippanapadu Dwarapudi
Post. | Merchant and Land-
lod |
| 7. M. R. Ry. Sannidhi Viraraghavulu-
garu. | Ellore | Merchant. |
| 8. M. R. Ry. Manda Venkataratnam-
garu. | Do. | Do. |
| 9. M. R. Ry. Pyda Sri Rama Cocanada
Krishnayya garu. | | Zamindar and Banker. |
| 10. M. R. Ry. Pyda Venkata-
narayanagaru. | Do. | Zamindar and Banker
<i>ex-officio</i> . |
| 11. M. R. Ry. Mothey Narayanarao-
garu, M.L.C. | | Do. |

Auditor.

- | | | |
|---------------------------------|-------------|-------------------------------------|
| M. R. Ry. V. S. S. R. Sarmagaru | Rajahmundry | Government Diplomaed
Accountant. |
|---------------------------------|-------------|-------------------------------------|

Manager.

- | | | |
|-------------------------------------|---------------------|--------------------|
| V. Venkatanarayanagaru,
Manager. | General Rajahmundry | Chemical Engineer. |
|-------------------------------------|---------------------|--------------------|

Managing Agents.

- | | | |
|-----------------------------|-------------|-----|
| Messrs. Mothey, Pydah & Co. | Rajahmundry | ... |
|-----------------------------|-------------|-----|

Bankers.

- | | | |
|------------------------|-------------|----------|
| Imperial Bank of India | Rajahmundry | Bankers. |
|------------------------|-------------|----------|

Registered Office.

Rajahmundry.

Dated 4th day of August, 1929.

We hereby certify that this report is correct.

(Sd.) MOTHEY, PYDAH & Co.,
Managing Agents.

(Sd.) BANGARU RAGHAVAYYA,

(Sd.) MANDA VENKATARATNAM,
Directors.

Balance Sheet as on 31st March 1930.

Capital and Liabilities.

	Rs.	A. P.	Rs.	A. P.
Authorised and Issued Capital— 20,000 shares of Rs. 100 each . . . . .	...	...	20,00,000	0 0
Subscribed Capital— 11,704 shares of Rs. 100 each . . . . .	...	...	11,70,400	0 0
Called-up Capital— 11,704 shares at Rs. 85 on each including commission allowed at 40 per cent. as per Prospectus and the Bye-law as <i>per contra</i>	9,94,840	0 0		
Less calls in arrear	22,720	3 4		
Calls in advance . . . . .	...	...	640	0 0
Amount on Shares pending allotment . . . . .	...	...	18,317	13 0
To Loans on Pro-notes— Pyda Sri Ramakrishnayya Brothers, Zamindars, Rs. 1,00,000 at As, 12-6 per cent. per mensem	3,421	7 0		

Property and Assets.

	Rs.	A. P.	Rs.	A. P.
Fixed Capital Expenditure— Carnatic Paper Mills Purchase Account— Purchase price of the above Mills paid to the Official Liquidator thereof as per order of the High Court, dated 29th November, 1929 . . . . .	...	...	4,29,833	0 10
Machinery including machinery stores, machinery equipment and erection charges, etc. . . . .	...	...	31,267	4 2
Buildings . . . . .	...	...	753	0 7
Furniture . . . . .	...	...	818	2 3
Tools and Implements . . . . .	...	...	85	4 0
Library . . . . .	...	...	30,698	15 11
Block Account . . . . .	...	...	19,942	7 6
Balance as per separate account . . . . .	...	...
Preliminary Expenses . . . . .	...	...
Share Commission— Commission allowed to the shareholders at 40 per cent. as per the Prospectus and Article 37 of the Company as <i>per contra</i>	4,66,634	0 0		
Commission on collections	5,313	9 11		
			4,71,947	9 11

Mothey Narasimharao, Zamindar, Rs. 1,00,000 at As. 12-6 per cent. per mensem		8,716 4 11	Debtors considered good— Advance for stores and machinery		2,657 2 9	
			To staff		793 13 5	
			Collection agents		2,272 5 4	
			Managing Agents' accounts		728 15 3	
			Other debtors		716 3 7	7,168 8 4
Creditors—			Stores and Stock—			
For Stores and articles supplied		2,503 7 3	Paper		3,593 4 0	
			Pulp and Bamboo		1,190 14 0	
			Chemicals, etc		3,144 13 0	
			Coal and fuel		4,142 14 3	
			General Stores		504 5 6	
Other creditors		553 4 2	Cash and other Balances—			12,576 2 9
			Imperial Bank, Rajah- mundry		2,478 15 8	
			Indian Bank, Madras		379 4 1	
			Cash in Office		2,688 12 8	
TOTAL		10,11,214 5 11	TOTAL		5,547 0 5	10,11,214 5 11

A separate audit report is herewith annexed.

(Sd.) MOTHEY, PYDAH & Co.,

Managing Agents.

(Sd.) MULIAPUDI TIMMARAJU,
(Sd.) MANDA VENKATARAMNAM,
(Sd.) MOORTHU KRISHNAMURTY,
(Sd.) SANNIDHI VIRARACHAVULU,

Directors.

(Sd.) V. S. S. R. SARMA,
Diplomed Accountant

RAJAHMUNDRY,

23rd September, 1930.

(3) *Letter No. 2080/31, dated the 23rd July, 1931, from The Andhra Paper Mills Company, Limited, Rajahmundry.*

We beg to submit as below:—

(1) *Letter from the Conservator of Forests.*—While informing you in person about this we had in view the correspondence that took place between the Carnatic Paper Mills Limited, and the Forest Department. Copies of extracts from these letters (copies of these only are filed and kept for reference in the office. The originals might have been missing during the transfer of management from the Carnatic Paper Mills Limited, to our management) are submitted herewith.

(2) *Answer to question 5.*—The figures are correct and are the actual quantities used during the year 1930-31 but the whole of it is not represented by the figure 131 tons as stated by us in answer to question 4.

We have still on hand as on 31st March, 1931—

About 8 to 10 tons of bamboo pulp.

About 2 tons of rag pulp.

About 8 tons of retree paper valued at cheaper rates.

About 7 tons of wrapping paper reserved for mill use.

About 10 tons of printing paper utilised for stationery work.

These figures have not been included in our reply to question 4 while the figure 131 tons is the actual weight of paper that has been reamed and despatched.

We therefore beg to amend our reply to question 4 as below:—

Varieties of Paper.	Total Outturn in tons.	Percentage.
Printings	nearly 39	25
Writings	55	35
Azure	1	·6
Blottings	3	1·9
Badami and Brown	26	17
Coloured Wrappers	7	4·5
Printing (Stationery)	10	4·5
Wrapping (exclusively)	7	4·5
Retree (for Mill use sorted out as retree)	8	5·1
TOTAL	156	100

The answer to question No. 19 will be submitted to you in a short time.

REGARDING THE AVAILABLE SUPPLIES OF BAMBOO.

1. *Bulletin No. 24, published by the order of the Government of India in 1922, page 40.*

“ Another area which has recently come under discussion lies in the Upper Godavari Division in the Marrigudem, Pulusumamidi, and Lakkavaram ranges, drained by the Godavari River and its tributaries, the Saberi, Sileru and Gonderu. The quantity of Bamboos Arundinacea, the species common on the West Coast, appears to be very small, and Dendrocalamus Strictus seems to be the commoner variety. The available supply in the area is stated to be about 15,000 tons, which should ensure a supply to a medium sized factory, the most suitable location for which would appear to be in the neighbourhood of Rajahmundry ”.

I am leaving out of consideration the supply of bamboos from the Lower Godavari forests and Conservator, Mr. Barry in his report says that "if the Mill can afford to cart from 40 miles and pay us Rs. 2 per ton for air dried bamboos I have little doubt that the required quantity could be supplied in normal years"

2. *Copy of letter R. O. C. No. 804-A, dated 7th June, 1924, from the Acting Conservator of Forests, I Circle, Waltair, to the Forest Utilization Officer, Madras.*

To report on such a subject accurately would require months of investigation. In making the following remarks, I have not even the District Forest Officers concerned, i.e., Upper and Lower Godavari, and as regards Rampa, practically nothing is known, for no forest officer below the rank of Conservator may go inside it. Considerable allowance must therefore be made for inaccuracy.

There is no bamboo in Cvugur, Cherla or Bhadrachalam Range, but there is a lot of bamboo in Marrigura and Rekapallee Reserves and in Polavaram range. As in the case of firewood, the quantity that can be supplied depends mainly on the distance from which the mill can afford to transfer the bamboos.

The quantity of bamboo required annually is said to be 9,000 tons. It is not stated whether this figure refers to dry bamboos culm is 40 lbs., vide page 27, Volume IV, Part 5 of the Indian Forest Records, then 4½ lakhs of bamboos culms would be required annually. I have assumed that Godavari Bamboos are only a little smaller than those of Burma and the West Coast.

Before I can form an opinion as to whether this quantity can be supplied, I must know how far the mill can afford to cart bamboos. If the mill can afford to cart from 40 miles and pay us Rs. 2 per ton, for air dried bamboos, I have little doubt that the required quantity could be supplied in normal years, but I do not know how much of the bamboos has flowered and died.

(True Copy.)

(Sd.) BARRY,
Ag. Conservator of Forests.

3. *Copy of letter from the District Forest Officer, Lower Godavari, Coconada, to the Managing Director, The Carnatic Paper Mills, Limited, Wexford House, Kilpauk, Madras, D. Dis No. 787—For.-24, dated 3rd November, 1924.*

Reference your letter (para. i) No. 723, dated 15th October, 1924, addressed to the Conservator of Forests, First Circle, Waltair.

Particulars regarding area and situation of the several bamboo coupes of this Division which are proposed to be sold in auction next year are given below:—

Rajahmundry Range.—Mallavaram Reserve (area 7,600 acres).

Peddapur Range.—Uligogula Reserve (area 5,200 acres).

Polavaram Range.—

Kopalli Reserve Coupe IV (area 3,800 acres).

Kovvda Reserve Coupe IV (area 3,651 acres).

Papikonda Reserve Coupe IV (area 3,400 acres).

(Sd.) V. N. SESHAGIRI RAO, Avl. B.A.,
District Forest Officer,
Godavari Lower.

4. *Copy of the letter from the Maharajah H. V. K. Suryarao, Bahadur Garu, C.B.E., Pithapuram, to the Managing Director, The Carnatic Paper Mills, Limited, Coconada, communication No. RC-2559 C. D. of 1923, dated 2nd January, 1925.*

Sir,

A monopoly of bamboo in my estate forests of Polavaram will be granted for a period of two years on condition of paying a sum of Rs. 19,350 annually and depositing one year's lease amount which will be adjusted in the second year. The minimum quantity to be removed during the year should be 17,15,000. The company will have to pay the minimum seignorage fixed, i.e., 19,350 whether they cut the minimum quantity fixed or not. If they work larger quantity than the minimum fixed they will have to pay seignorage for the excess quantity according to the existing estate rates.

The company will have to work the forests during this period according to the rules of the estate under the supervision of my forest establishment. An early reply agreeing to the terms stated above will highly oblige.

(True Copy.)

I have the honour to be,

Sir,

Your most obedient Servant,

(Sd.) CH. JOGIAH,
for Maharajah.

5. *Copy of letter from F. A. Seager, Esquire, District Forest Officer, Upper Godavari, to the Hon'ble Mr. S. Cox, Chief Conservator of Forests, Chepauk, Madras, in his communication R. C. No. 648/For. of 20, dated 27th July, 1920.*

With reference to your D. O., dated 29th June, 1920, directing to report the extent, etc., of *Dendrocalamus Strictus* and *Bambusa Arundinacea* bearing forests, I beg to state as follows:—

1. Extent.	<i>Dendrocalamus</i> <i>Strictus</i> .	<i>Bambusa</i> <i>Arundinacea</i> .
Marrigudem Range	92 sq. miles	About 1½ sq. miles
Pulusumamidi Range	143 „	13 „
Lakkavaram Range	60 „	This species is rarely found along the vagus near Chintoor.

Quantities that can be extracted each year on a three year's rotation.—In the Marrigudem Range about 3,00,000 *Dendrocalamus Strictus* and about 500 *Bambusa Arundinacea*; in Pulusumamidi Range between 2 or 3 lakhs of *Dendrocalamus* and about 25,000 *Bambusa*; and in Lakkavaram Range about 2 lakhs of *Dendrocalamus* can be extracted every year. *Bambusa Arundinacea* is not available in abundance in Lakkavaram Range.

The prices obtained for each kind of bamboos.—The average selling rates at Rajahmundry of each kind of bamboo is as follows:—

	<i>Dendrocalamus</i> <i>Strictus</i> .	<i>Bambusa</i> <i>Arundinacea</i> .
	Per 1,000.	Per 1,000.
	Rs.	Rs.
Marrigudem Range	60—70	100—120
Pulusumamidi Range	60—70	120
Lakkavaram Range	60—80	Not removed hitherto.

Cost of extraction—

	Cost of felling per 1,000.	Cost of carting per 1,000.	Cost of rafting per 1,000.
<i>Marrigudem Range—</i>			
	Rs.	Rs.	Rs.
Dendrocalamus Strictus . .	12—18	15—20	20
Bambusa Arundinacea . .	25	25	29
<i>Pulusumamidi Range—</i>			
Dendrocalamus Strictus . .	10—15	10—15	20
Bambusa Arundinacea . .	25	15	27
<i>Lakkavaram Range—</i>			
Dendrocalamus Strictus . .	10—12/8	12—13	25—30

Bambusa Arundinacea was not hitherto removed from this Range and hence no data is available for it.

6. Copy of the letter from the Hon'ble Mr. S. Cox, Chief Conservator of Forests, Madras, to the Managing Director, The Carnatic Paper Mills Limited, Madras, in his communication No. 1914/19-12, dated the 17th September, 1920.

With reference to your letter dated 31st August, 1920, I have the honour to give you the following supplementary information.

There is a considerable area of bamboo in the Peddapur and Gokavaram Ranges of the Lower Godavari District as shown on the attached sketch. There is also a large area of Bamboo forest in Rampa which is not under administration by this Department; but for want of roads the export would probably be extremely expensive and difficult.

I have the honour to be,

Sir,

Your most obedient Servant,

(Sd.)

for Chief Conservator of Forests.

- (4) Letter dated 31st July, 1931, from The Andhra Paper Mills Company, Limited.

We regret very much for the delay in submitting the Form 3 which we enclose herewith. You will notice from the form that there are two items which have been altered. In answering question 19 originally we missed taking into account the quantity of Bamboo Pulp that has been lying and left unused as on 1st April, 1931. It is 10 tons. So we have made allowance for that figure in the quantity of material used. In the item of paper cuttings (Broke) similarly we have not taken into account the quantity of 6 tons of the stuff under operation, while the Stores have issued 25 tons.

We beg to submit herewith the report of Mr. J. A. Master, Deputy Conservator of Forests, on his survey of bamboo forests in the Rekapalli Hill, Reserves of Upper Godavari Division.

Enclosure.

Form No. III.

Particulars.	1930-31.	Remarks.
<i>Bamboo.</i>		
	Tons.	
1. Quantity of material used . . .	98	10 tons of pulp was left over unused. Hence necessary adjustment is made from 120 tons of bamboo.
2. Quantity of finished paper which the material represents.	4	
<i>Grass.</i>		
1. Quantity of material used . . .	1	This has not been brought into as it is still under investigation.
2. Quantity of finished paper which the material represents.	Nil	
<i>Rags.</i>		
1. Quantity of material used . . .	30	
2. Quantity of finished paper which the material represents.	2½	
<i>Jute waste.</i>		
1. Quantity of material used . . .	6½	
2. Quantity of finished paper which the material represents.	3	
<i>Imported pulp.</i>		
1. Quantity of material used . . .	95	
2. Quantity of finished paper which the material represents.	81	
<i>Broke.</i>		
1. Quantity of material used . . .	19	6 tons of cuttings have been held over unused.
2. Quantity of finished paper which the material represents.	16	
<i>China Clay.</i>		
1. Quantity of material used . . .	21	
2. Quantity of finished paper which the material represents.	12.6	
<i>Total materials.</i>		
Total quantity of materials used .	270½	
Total quantity of finished paper which materials represents.	156	

THE ANDHRA PAPER MILLS COMPANY, LIMITED.

B.—ORAL.

Evidence of Mr. T. VENKAJEE recorded at Calcutta, on Wednesday, the 5th August, 1931.

President.—Mr. Venkajee, you represent the Andhra Paper Mills Company?

Mr. Venkajee.—Yes.

President.—What is your position in the Company?

Mr. Venkajee.—I am the General Manager of the concern.

President.—The Andhra Paper Mills Company have taken over the affairs of the original Carnatic Paper Mills Company?

Mr. Venkajee.—Yes.

President.—When did they take over from the Carnatic Paper Mills?

Mr. Venkajee.—In January 1929.

President.—What was the paid up capital of the Carnatic Paper Mills?

Mr. Venkajee.—Rs. 17 lakhs, I believe.

President.—And the Company was wound up at the instance of the Madras Government, am I right?

Mr. Venkajee.—It was not exactly at the instance of the Madras Government. It happened like this. The paid up capital of the Company was more than Rs. 16 lakhs. Still we were in need of money. We applied for State Aid and the Government sanctioned Rs. 6 lakhs.

President.—When did they sanction Rs. 6 lakhs?

Mr. Venkajee.—In 1925 and they paid only Rs. 4 lakhs to consolidate our debts and hand the mills as mortgage. Afterwards they were considering the economic possibilities of this concern by sending two or three representatives from the Department of Industries. During that period the mill was shut down and they were only paying the wages for the staff that were kept on to keep the machinery in working order. After that they were trying to get rid of the mortgage and the liability of the Company by handing it to somebody. It was then that the shareholders of the Company formed a new concern, "the Andhra Paper Mills Company, Limited" and took over the thing from them. It was during this short period of transition that they brought the thing into voluntary liquidation, because the new Company had to come into existence.

President.—The Carnatic Paper Mills went into voluntary liquidation and the original shareholders formed themselves into a new Company, the Andhra Paper Mills Company, Limited.

Mr. Venkajee.—Yes.

President.—What is the paid up share capital of the Andhra Paper Mills Company?

Mr. Venkajee.—Rs. 6 lakhs, but the actual share capital is Rs. 11 lakhs.

President.—What precisely is the actual paid up capital of the Andhra Paper Mills? What is the exact figure?

Mr. Venkajee.—Rs. 6,49,227.

President.—Approximately Rs. 6½ lakhs.

Mr. Venkajee.—Yes.

President.—But the nominal paid up share capital of the Company, that is to say the share capital of the Company which is entitled to dividend is about Rs. 11½ lakhs.

Mr. Venkajee.—Yes.

President.—The difference between the paid up capital as it appears in the books and the actual paid up capital, viz., Rs. 6½ lakhs, that represents

the bonus capital, I think. That is the bonus capital which has been credited to the original shareholders of the Company who are now in the Andhra Paper Mills.

Mr. Venkajee.—Yes.

President.—On that they are entitled to dividend.

Mr. Venkajee.—Yes.

President.—So that the actual cash which the Andhra Paper Mills Company received was Rs. 6½ lakhs from the shareholders.

Mr. Venkajee.—Yes.

President.—Out of that Rs. 6½ lakhs, how much did you pay for purchasing the mill?

Mr. Venkajee.—Rs. 4,29,833.

President.—Rs. 4.29 lakhs, that was the payment you made for the purchase of the mill from Government.

Mr. Venkajee.—Yes.

President.—Since then have you incurred any capital expenditure?

Mr. Venkajee.—You mean towards machinery?

President.—Machinery and buildings.

Mr. Venkajee.—About Rs. 60,000.

President.—That is to say about Rs. 4.9 lakhs is your fixed capital expenditure since you took over the mill.

Mr. Venkajee.—Yes.

President.—I take it the balance between 4.9 lakhs and your actual paid up capital of Rs. 6½ lakhs represents stores, stocks and things of that sort.

Mr. Venkajee.—And the amount spent during these 1½ years.

President.—It is practically working finance?

Mr. Venkajee.—Yes.

President.—I should like to get a clear idea of the lay out and equipment of your plant. I will ask you the points on which I want information. At present you are equipped for the manufacture of pulp and paper from bamboo.

Mr. Venkajee.—Yes.

President.—Can you explain how exactly in your present plant, as it is equipped at present, you carry on the mechanical treatment of bamboo before digestion?

Mr. Venkajee.—There is one crusher and one chipper before the bamboo goes on to the digester.

President.—By one crusher what do you mean? How many rolls are there?

Mr. Venkajee.—There are two sets of rolls.

President.—Two pairs?

Mr. Venkajee.—Yes.

President.—Bamboo passes through two pairs of rolls for the crushing process.

Mr. Venkajee.—Yes.

President.—Can you describe to me what exactly is the surface arrangements of your rolls?

Mr. Venkajee.—The first is an ordinary horizontal grooved roll and the other one is a fluted grooved roll something like a star in the surface.

President.—What has been your experience of these crushers? Do they function properly?

Mr. Venkajee.—No, they don't function properly.

President.—What is the trouble?

Mr. Venkajee.—The trouble is that the first rolls which are horizontally grooved should be grooved along the surface in the line of the circumference of these rolls.

President.—What exactly is the difficulty that you experience with the present grooving?

Mr. Venkajee.—The bamboo varies in its diameter, I mean, in its sectional diameter, and as it is fed into the crusher, there is an arrangement for the first rolls by which the top one will lift itself up by a spring as the bigger bamboo comes in and as it passes into it presses it down; there are the horizontal grooves which almost cut it at distances of 6 or 7 inches apart.

President.—It cuts it?

Mr. Venkajee.—It makes big notches. When bamboo is passed into it—if the roll has got the fluted grooves along its surface—it makes a sort of notch all along the length of the bamboo. But here the roll has got the horizontal grooves and makes big notches. (Explained with the help of a diagram.)

President.—It doesn't crush the bamboo along its whole length.

Mr. Venkajee.—No. It cuts at a distance of 6" or 7" when it passes out of these rolls.

President.—From the first pair it goes automatically into the second.

Mr. Venkajee.—Yes.

President.—What happens in the second?

Mr. Venkajee.—It takes a zigzag course like a snake, because the surface will be angular at the end and the bamboo goes there and gets bent.

President.—So that practically what it amounts to is that the crusher doesn't crush.

Mr. Venkajee.—No, it doesn't.

President.—It is entirely ineffective.

Mr. Venkajee.—That is why we have discarded it.

President.—After the bamboo is passed through the two pairs of crushing rolls, then what happens?

Mr. Venkajee.—It automatically goes into the chipper.

President.—What happens in the chipper? Does it chip?

Mr. Venkajee.—With this crusher as it is existing if bamboo passes through the crusher, the present chipper won't function well, because it will always come in small pieces ready to fall down and when the knife touches the bamboo, the pieces that are made loose by the second set of rolls drop down.

President.—That is to say when the bamboo is fed into the chipper, after passing through the crusher it is not sufficiently pressed against the knives to cut effectively.

Mr. Venkajee.—(Explained with the help of a diagram.)

President.—Bamboo is not able to press against the knives for the knife to chip properly so that the chipper doesn't chip.

Mr. Venkajee.—Yes, if the crusher is used.

President.—Suppose you use no crusher, and you put the bamboo straight into the chipper?

Mr. Venkajee.—As we are doing now.

President.—Yes. Then the chipper performs its work.

Mr. Venkajee.—Yes.

President.—So that you have discarded your crusher?

Mr. Venkajee.—Yes. When Mr. Raitt came to examine our mill he suggested rolls with fluted grooves that are in existence in other mills.

President.—How long ago did you purchase these crushers?

Mr. Venkajee.—1920.

President.—Who designed the rolls?

Mr. Venkajee.—Stebbins Engineering and Manufacturing Company.

President.—On what kind of model did they design?

Mr. Venkajee.—I don't know.

President.—Was it modelled on a sugarcane crusher?

Mr. Venkajee.—I don't think so.

President.—You have two sets of rolls and the sugarcane crusher has got two sets of rolls.

Mr. Venkajee.—In the case of sugarcane crushers, the grooves are fluted as in ordinary bamboo crushers.

President.—It was a crusher which was specially designed for bamboo.

Mr. Venkajee.—Yes, so they wrote in the plan. The first time Mr. Raitt examined it he didn't approve of it. Next time we started again when we had a chance, but as we could not manage to work it well, we stopped it.

President.—You put the bamboo straight into the chipper, chip it and then you pass the chipped bamboo into a screen.

Mr. Venkajee.—Yes.

President.—For cleaning and dusting?

Mr. Venkajee.—Yes.

President.—How does the screen work?

Mr. Venkajee.—It works all right. It is only intended to remove any small particles adhering to the bamboo and also some fine dust goes down.

President.—And from the screen it goes into the digesters?

Mr. Venkajee.—It goes into the chip bin at the top of the digesters.

President.—What happens there?

Mr. Venkajee.—It is just like a store room.

President.—Chips are stored for the time being.

Mr. Venkajee.—Yes into the chip bin sufficient for any number of digesters.

President.—It is done automatically?

Mr. Venkajee.—Yes from the bucket elevator.

President.—From that bin you have a sort of oscillating chute.

Mr. Venkajee.—We open it and let it into the digester.

President.—As occasion arises you pass it from the bin into the digester?

Mr. Venkajee.—Yes.

President.—How many digesters have you?

Mr. Venkajee.—Only one for the bamboo plant.

President.—What sort of a digester is it?

Mr. Venkajee.—Wood pulp digester.

President.—Is it a stationary digester?

Mr. Venkajee.—Yes and a vertical digester.

President.—What is the capacity of that?

Mr. Venkajee.—2½ tons of pulp or six tons of bamboo.

President.—What process of digestion do you follow?

Mr. Venkajee.—We follow the sulphate process with a leaning towards fractional digestion.

President.—Is it just a leaning?

Mr. Venkajee.—We follow the fractional system, but the temperatures, pressures and other things are quite different with us.

President.—It is the sulphate process modified by the fractional method?

Mr. Venkajee.—Yes.

President.—How exactly does it work? You fill your digester with chipped bamboo?

Mr. Venkajee.—And let in the white liquor.

President.—You do the boiling in how many stages?

Mr. Venkajee.—In two stages.

President.—The first boiling takes what time?

Mr. Venkajee.—Two hours.

President.—And the second boiling?

Mr. Venkajee.—4½ hours.

President.—Are you speaking from your experience of last year?

Mr. Venkajee.—From what we are doing now.

President.—What happens to your liquor?

Mr. Venkajee.—After the first boiling we allow it to run into another storage tank for the purpose of recovery.

President.—And the second liquor?

Mr. Venkajee.—We store it in another tank which is used in the next digester.

President.—You store that for the next first digestion?

Mr. Venkajee.—For the next first digestion.

President.—It has got to be reheated?

Mr. Venkajee.—No, we have no arrangement for reheating it in tanks. So, we simply admit it into the digester.

President.—What is the interval between one digestion and another?

Mr. Venkajee.—You mean complete digestion?

President.—The only way in which you can use the second liquor is to admit it into the digester when the first digestion is complete and the second digestion begins.

Mr. Venkajee.—Yes.

President.—Now the second digestion begins immediately after the first?

Mr. Venkajee.—Yes.

President.—How long does the liquor remain in the tank before it goes into the digester for the second digestion?

Mr. Venkajee.—It does not take much time. It takes about an hour. To blow off the pulp takes about 20 minutes. After that, we wait about 20 minutes to remove the lid and let in the chips.

President.—You say that your first liquor is sent on to the recovery plant.

Mr. Venkajee.—Our recovery plant is not working now.

President.—What is the arrangement that you have for recovery?

Mr. Venkajee.—We have at present on hand only two evaporators of what are called the double effect evaporators. They are of the Badger Webere type suitable for salting type operations and not suitable for the pulp and paper mill. We have called for estimates from Scott's Evaporator Company. They have recommended us to erect evaporators on a triple effect basis. That is what the managing agents are considering. They want Rs. 9,000 f.o.b. London.

President.—With the present double effect evaporator, the soda recovery plant does not function at all?

Mr. Venkajee.—It functions, but it does not function efficiently.

President.—Can you tell approximately from your short experience what kind of percentage of recovery you get?

Mr. Venkajee.—We calculated the percentage, but we find that it is not worth calculating. What we got was about 20 per cent.

President.—From your present plant?

Mr. Venkajee.—Yes.

President.—What about the incinerator part of it? Has it got ample capacity?

Mr. Venkajee.—There is enough capacity for it.

President.—If your evaporators have sufficient capacity the incinerator would function separately.

Mr. Venkajee.—Yes.

President.—At present your soda recovery plant is ineffective?

Mr. Venkajee.—Quite.

President.—That is as far as the pulp plant is concerned.

Mr. Venkajee.—Yes.

President.—Now I want to get some idea of the capacity of the pulp part of your plant as it stands at present. The crusher may be left out?

Mr. Venkajee.—Yes.

President.—Because it does not come into our present operations.

Mr. Venkajee.—Quite.

President.—What is the capacity of your chipper?

Mr. Venkajee.—12 tons in 16 hours.

President.—12 tons of bamboo in 16 hours?

Mr. Venkajee.—Yes.

President.—That is to say two shifts of 8 hours?

Mr. Venkajee.—Yes.

President.—12 tons of bamboo in two shifts of 8 hours?

Mr. Venkajee.—That is how we work.

President.—And the capacity of your digester is how much?

Mr. Venkajee.—2½ tons for every digestion.

President.—Give it in terms of raw chipped bamboo?

Mr. Venkajee.—5½ tons; that is what we exactly put into the digester.

President.—That is taking a period of 16 hours?

Mr. Venkajee.—No. For every digestion we put in 5½ to 6 tons of chipped bamboo.

President.—One digestion takes 7 hours?

Mr. Venkajee.—8 hours.

President.—What I am trying to get at is this. Supposing your chipper was working 16 hours, the corresponding amount you could deal with in the same period for two digestions would be how many tons?

Mr. Venkajee.—12 tons of bamboo and 5 tons of pulp.

President.—So that it just balances?

Mr. Venkajee.—We work it all right at that rate because so far we never worked the digester for 24 hours.

President.—What about your duster? Is the capacity of that, sufficient for the digester on the one hand and chipper on the other?

Mr. Venkajee.—It is all right.

President.—Could we take 6 tons of bamboo on a shift of eight hours as the capacity of your pulp plant?

Mr. Venkajee.—That is of the chipper plant.

President.—Taking the whole plant—taking your chipper, your screen and your digester which together form your pulp plant—it has sufficient capacity for dealing with 6 tons of bamboo in 8 hours?

Mr. Venkajee.—Yes.

President.—Well now let us get to the paper section. We shall start from bleaching.

Mr. Venkajee.—Bleaching is done in the pulp section.

President.—You can arrange it as you like. For the purpose of this discussion, let us assume that the bleaching plant is part of the paper section. What is the capacity of your bleaching plant?

Mr. Venkajee.—The particular difficulty we had with the bleaching plant is the continuous tower system as designed by Stebbins Engineering and Manufacturing Company. Perhaps you have seen this tower system in some of the other mills. They made a mistake, as far as I can see, in sending two towers only instead of a number of towers. We bleach pulp first in one tower, wash it into the other. It is there finally bleached and washed back into the first tower instead of allowing it to go forward in a continuous manner. The present method reduces our output terribly.

President.—As it is equipped at present what do you consider to be the capacity of the bleaching plant?

Mr. Venkajee.—In every four hours we turn out $1\frac{1}{2}$ tons of pulp.

President.— $1\frac{1}{2}$ tons of bleached pulp?

Mr. Venkajee.—Yes.

President.—That is in how many hours?

Mr. Venkajee.—In four hours.

President.—Take your beaters. What is the capacity of your beaters? By the way, how many beaters have you?

Mr. Venkajee.—Two.

President.—With an aggregate capacity of how much?

Mr. Venkajee.—1,000 lbs.

President.—The two together have a capacity of 1,000 lbs. What about the paper machine?

Mr. Venkajee.—It is capable of producing 5 tons a day. That is the maximum capacity of the machine per day.

President.—That is the maximum declared capacity of the paper machine?

Mr. Venkajee.—Yes.

President.—Five tons in eight hours?

Mr. Venkajee.—In 24 hours.

President.—What is the capacity in 24 hours of your beaters?

Mr. Venkajee.—The beaters' capacity varies according to the stuff we put into it.

President.—About one-fourth of that?

Mr. Venkajee.—The two small beaters can give enough pulp for four tons of paper in 24 hours. We have actually made four tons.

President.—Would your beaters be able to turn out enough pulp for feeding the paper machine to the extent of four tons in 24 hours?

Mr. Venkajee.—Yes. We can get it with a little admixture of broke.

President.—Supposing your beaters and your paper machine were able to deal with 4 tons in 24 hours, would you be able to get that amount of pulp bleached in your bleaching plant?

Mr. Venkajee.—More than that we can do. It is only 4 tons that is needed on the paper section. We can get four tons in nearly ten hours time.

President.—Well then, the capacity of the paper machine may be taken for practical purposes as 4 tons?

Mr. Venkajee.—Yes.

President.—And all the accessories of the paper machine, viz., beaters, bleachers and so on are adequate for a capacity of four tons.

Mr. Venkajee.—Yes.

President.—And then your total pulp capacity you give as 12 tons of bamboo, is not that right?

Mr. Venkajee.—Yes.

President.—That is about 5 tons of pulp?

Mr. Venkajee.—Yes.

President.—So that you have a capacity of 5 tons of pulp a day and four tons of paper a day. Is that right?

Mr. Venkajee.—That is the present working capacity of the mills.

President.—That per year is 1,500 tons of pulp and 1,200 tons of paper?

Mr. Venkajee.—Yes.

President.—With practically no arrangement for soda recovery?

Mr. Venkajee.—That is so.

President.—You said that you are using the sulphate process?

Mr. Venkajee.—Yes.

President.—In what proportion do you use?

Mr. Venkajee.—60 of caustic soda and 40 of sodium sulphide.

President.—The two together forming what proportion on bamboo?

Mr. Venkajee.—18 per cent. on bamboo.

President.—Are these theoretical figures?

Mr. Venkajee.—Actual figures.

President.—How much exactly did you produce last year?

Mr. Venkajee.—You mean bamboo pulp?

President.—Bamboo pulp and paper.

Mr. Venkajee.—156 tons of paper in one year and 54 tons of bamboo pulp.

President.—You made up the deficiency by imported pulp?

Mr. Venkajee.—Yes, and paper cuttings.

President.—Why didn't you try and make enough pulp for 156 tons of paper?

Mr. Venkajee.—The difficulty about pulp is first of all in regard to the question of recovery. It would cost us quite a lot as long as we don't recover.

President.—The arrangements have not been perfected yet?

Mr. Venkajee.—No. The recovery arrangement is not perfected yet. Still we were anxious to manufacture bamboo pulp and we did as much as we could.

President.—156 tons was your output in 1930-31?

Mr. Venkajee.—Yes.

President.—Since March 1931 have you been producing on a bigger scale? What has been your monthly output since March?

Mr. Venkajee.—About only 20 tons a month on an average.

President.—That is your average output of paper?

Mr. Venkajee.—Yes.

President.—What is your average output of pulp?

Mr. Venkajee.—About 8 tons a month.

President.—The balance being made up by imported pulp largely?

Mr. Venkajee.—Yes, and paper cuttings.

President.—More imported pulp than paper cuttings?

Mr. Venkajee.—During this time we made a little more from paper cuttings.

President.—When you get imported pulp in Rajahmundry where do you land it?

Mr. Venkajee.—At Cocanada.

President.—You directly import it and have it landed at Cocanada?

Mr. Venkajee.—Yes.

- President.*—When did you buy last?
- Mr. Venkajee.*—We have six monthly contracts.
- President.*—When was the contract made?
- Mr. Venkajee.*—In 1930.
- President.*—At what price?
- Mr. Venkajee.*—At £15 a ton (c. i. f. Cocanada).
- President.*—What is the distance from Cocanada to Rajahmundry?
- Mr. Venkajee.*—About 48 miles by road and 56 miles by canal.
- President.*—What does it cost you to transport?
- Mr. Venkajee.*—About Rs. 5 per ton.
- President.*—So that the pulp that you are using now cost you Rs. 200?
- Mr. Venkajee.*—Rs. 220 a ton delivered at the mill.
- President.*—Where do you get your other materials?
- Mr. Venkajee.*—We get caustic soda, sodium sulphide, bleaching powder and chlorine from the Imperial Chemical Industries.
- President.*—That is to say actually you buy them in Madras?
- Mr. Venkajee.*—Yes.
- President.*—At what price do you get the caustic soda at the mills?
- Mr. Venkajee.*—Rs. 14 a cwt. at Rajahmundry including railway freight.
- President.*—And your sodium sulphide?
- Mr. Venkajee.*—Rs. 8-8-0 a cwt. landed at the mill.
- President.*—And bleaching powder?
- Mr. Venkajee.*—Rs. 9-6-0 a cwt.
- President.*—That is more or less standard bleaching powder?
- Mr. Venkajee.*—Yes.
- President.*—All these are imported material?
- Mr. Venkajee.*—Yes.
- President.*—What about the materials that you obtain locally?
- Mr. Venkajee.*—We get rosin from Jalal and Company in Northern India, and alumina ferric slabs from the Bengal Chemical and Pharmaceutical Works, Calcutta, and China Clay from Singhbhum.
- President.*—Is it of good quality?
- Mr. Venkajee.*—That is all right for us.
- President.*—What does the China Clay cost you delivered at the mill?
- Mr. Venkajee.*—Rs. 90 per ton. We pay Rs. 45 per ton f. o. r. their station.
- President.*—The railway freight you give us is Rs. 42?
- Mr. Venkajee.*—Yes.
- President.*—What did you say was the freight on rosin?
- Mr. Venkajee.*—The total cost delivered at the mills is Rs. 350 per ton.
- President.*—That is as far as the auxiliary materials are concerned. Where do you get your coal from?
- Mr. Venkajee.*—We get the major portion of it from Bengal.
- President.*—What kind of coal is this that you use? What price do you pay at pitsmouth?
- Mr. Venkajee.*—From Rs. 4-8-0 to Rs. 6-8-0 at pitsmouth.
- President.*—What freight do you pay on coal?
- Mr. Venkajee.*—Freight comes up to nearly Rs. 10; it cost us I think Rs. 15 to 16 per ton in the mill including unloading and everything.
- President.*—What is the total consumption of coal per ton of paper?
- Mr. Venkajee.*—You mean per ton of paper without pulp making?

President.—What I want is your consumption of coal per ton of paper that you have made out of your own pulp.

Mr. Venkajee.—6 tons of coal.

President.—So that the freight on coal is Rs. 60 per ton of paper?

Mr. Venkajee.—That is right, including pulp making.

President.—Why don't you try coal from the nearer area?

Mr. Venkajee.—We wrote to Singareni asking them if they would reduce the freight.

President.—Suppose you got coal from Singareni what freight would you pay?

Mr. Venkajee.—If they only reduce the freight the whole thing would come to about Rs. 9 per ton.

President.—Supposing the existing schedule of coal freight was applied to coal despatched from Singareni to your mills what would be the freight?

Mr. Venkajee.—It would practically cost us the same as it costs us for coal from Bengal.

President.—And Singareni coal is actually inferior?

Mr. Venkajee.—It is not as good as Bengal coal.

President.—Compared with Bengal coal, Singareni coal has a lower calorific value?

Mr. Venkajee.—Yes. I only got this information from people who are using this coal in the Nizam's Dominion.

President.—So that as things stand at present it is better for you to get coal from Bengal paying freight at the rate of Rs. 10 per ton?

Mr. Venkajee.—That is so.

President.—What was your cost in 1930-31? You made 156 tons of paper out of which about 54 tons of pulp were made in your own plant. Would you be able to tell us what it cost you to make one ton of paper and one ton of pulp?

Mr. Venkajee.—I only made a rough estimation, but it is not our official figure, and it approximately cost us excluding depreciation, commission and other things.....

President.—Omit depreciation, interest on capital, interest on working capital, managing agency charges and take simply the expenditure at the works.

Mr. Venkajee.—Rs. 406 a ton of finished paper with all the miscellaneous raw materials and bamboo pulp, on the basis of our working last year.

President.—That is to say, taking your raw material as comprising bamboo and imported pulp and paper cuttings, taking the furnish in that proportion you get a works cost of Rs. 406 per ton of paper.

Mr. Venkajee.—Yes.

President.—Have you any approximate estimate of the cost of bamboo pulp as distinct from paper?

Mr. Venkajee.—I think it cost us Rs. 220 without recovery owing to the low outturn realised from the digesters.

President.—Air dry or bone dry?

Mr. Venkajee.—That is air dry.

President.—How did you make your allocations?

Mr. Venkajee.—We took the exact chemicals used on it.

President.—Can you tell us, for example, the value of steam that goes into the pulp plant as distinct from the paper plant?

Mr. Venkajee.—There is a difficulty to allocate steam like that.

President.—Are your labour charges in the pulp plant directly charged?

Mr. Venkajee.—Yes.

President.—This pulp cost of Rs. 220 that you give, on what price of bamboo is that based?

Mr. Venkajee.—Rs. 20 a ton delivered at the mill.

President.—That is the price at which you actually got it?

Mr. Venkajee.—Yes.

President.—Where do you get your bamboo from?

Mr. Venkajee.—From the Gokavaram forest.

President.—How far is it from your mills?

Mr. Venkajee.—12 miles.

President.—Is it brought by river?

Mr. Venkajee.—By double bullock cart.

President.—Have you any lease over that area?

Mr. Venkajee.—No.

President.—You get it from contractors?

Mr. Venkajee.—Yes.

President.—I understand from your replies that there was an enquiry conducted by the Madras Government on your behalf about the forest resources of the Rekapalli area?

Mr. Venkajee.—Yes.

President.—That enquiry was conducted in different areas?

Mr. Venkajee.—Yes.

President.—How far is Rekapalli from Rajahmundry?

Mr. Venkajee.—About 50 miles.

President.—And the other is 12 miles?

Mr. Venkajee.—Yes, but we are getting bamboo from 18 miles up the river.

Mr. Boag.—18 miles above your mill?

Mr. Venkajee.—Yes.

President.—If you got your bamboo from Rekapalli they would be rafted down?

Mr. Venkajee.—Yes.

President.—What is the figure which the Forest Officer who investigated this gave as the available supply? I understand Mr. Master's estimate on a five-year rotation was over 20,000 tons a year.

Mr. Venkajee.—This survey was undertaken by Mr. Master with a view to ascertain whether the Rekapalli hill reserves could supply 10,000 tons of bamboo annually to the Carnatic Paper Mills and his conclusions are as follows:—"The Rekapalli Hill reserve is capable of yielding 10,000 tons of bamboo annually at an average cost of Rs. 17 per ton if bamboos were exploited through the agency of contractors or Rs. 15-8-0 per ton if exploited departmentally by the company. The cost per ton includes all charges the writer can think of and if any charge of a minor nature should arise later on it can be amply met from the above rates only. To make the company's position more secure as far as the supply of bamboo is concerned, further exploitable areas as suggested in the last paragraph of section 8 should be tapped after constructing all necessary outlets and redistributing such extra areas between the two felling series after duly considering the yield. This is a simple matter and any District Forest Officer can do it on the same lines as proposed in the report."

President.—Mr. Master's estimate of the cost at which bamboo can be delivered at the mill from the Rekapalli area is Rs. 17?

Mr. Venkajee.—Yes, if done through contractors and Rs. 15-8-0 if done through the paper mill itself, but he does not advise it in the report.

President.—Actually you have been able to get it at Rs. 20 per ton?

Mr. Venkajee.—Yes.

President.—So that on these survey figures you have an available supply of 20,000 tons which you can get at the mills at not more than Rs. 20 per ton?

Mr. Venkajee.—That is right.

Mr. Rahimtoola.—Were you in any way connected with the Carnatic Mills?

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—You were in that mill since it started in 1920-21?

Mr. Venkajee.—I joined them when they started construction of the building in 1921.

Mr. Rahimtoola.—The called up capital of the Company is Rs. 9,72,000? I am now talking of the Andhra Paper Company.

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—Whereas you actually got cash, Rs. 6,49,000.

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—The reason was that you had to give Rs. 40 premium so to say to the people who were holding shares in the Carnatic Paper Mills?

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—I take it you have seen the detailed scheme for re-organising your mill by Dehra Dun people.

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—Have you taken any particular action on that?

Mr. Venkajee.—Yes. I will read the last paragraph of their report on page 24. "Until the requisite capital is raised and the erection of machinery, buildings, etc., necessary for the above output is completed, manufacture of paper at the mill should be continued. With the existing plant production of about 1½ tons only is possible. This would put the firm to a net loss of nearly Rs. 60 per day. To stop this loss, the production of paper must be raised as quickly as possible to the maximum output of the existing paper machine, viz., 2½ to 3 tons per day. A capital expenditure of nearly one lakh of rupees will be required for this purpose. The firm can probably get together this amount easily and should, therefore, lose no time in carrying out additions and alterations necessary to equip the mill for the above output (2½—3 tons). They should particularly expedite the construction of a settling tank and residential quarters for the staff and so on." Following up the recommendations, we have now come to the stage of producing 3 tons a day.

Mr. Rahimtoola.—I was particularly referring to the various alterations suggested by them in the existing machinery.

Mr. Venkajee.—We have carried out all the necessary alterations that they have pointed out. The next thing that we should get is the second paper machine.

Mr. Rahimtoola.—Did you ask the Dehra Dun people to submit to you this report after personal visit by them?

Mr. Venkajee.—I think we did. I was in England at that time, but I know Mr. Bhargava came to Rajahmundry and examined the mills when I was in England.

Mr. Rahimtoola.—You said Mr. Raitt also paid a visit to your mill.

Mr. Venkajee.—Yes, in 1923-24 at the instance of the Madras Government.

Mr. Rahimtoola.—The Madras Government promised Rs. 6 lakhs to the Carnatic Paper Mills, but actually gave Rs. 4 lakhs based on the report submitted by Mr. Raitt.

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—Is it a fact that you have abandoned the use of the crusher, because of the triangular shape of the grooves which didn't produce any crushing effect?

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—Are you using the chipper as a substitute?

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—You are already aware that the Dehra Dun people have recommended, instead of crusher and chipper, another kind of chipper capable of chipping 25 tons of bamboo per day. Have you installed this or have you placed an order?

Mr. Venkajee.—We made enquiries about the disintegrator and that was not suitable for us. Then there was the arrangement made by Mr. Raitt to order rollers with fluted grooves from Massey and Company and they wanted about Rs. 12,000 if I remember right. We are waiting for the adjustment of finances one after another. With the money on hand we ordered the new beater, because our outturn was getting too low.

President.—What is the kind of enquiry you made about these disintegrators? Dehra Dun people are experimenting with bone disintegrator.

Mr. Venkajee.—I don't know what they are doing. When I was in Dehra Dun they had ordinary rollers with fluted grooves.

President.—We were told in Dehra Dun that they were trying the experiment of disintegrating bamboo on a bone disintegrator.

Mr. Venkajee.—Yes, I heard about it, but I have not seen it myself.

President.—That is not a matter on which you enquired.

Mr. Venkajee.—After Mr. Bhargava left Rajahmundry the management made some enquiries about disintegrators and how I came to know about it was, that after I joined service here I asked them and they said they made enquiries and were told that they were not suitable.

President.—Who told you?

Mr. Venkajee.—The then General Manager of our mill.

Mr. Rahimtoola.—You have stated that the time required in the digester plant for cooking is 2 hours for the first and about 6 hours for the second altogether about 8 hours, whereas in the report it is stated that the cycle of digestion would require altogether 10 to 11 hours.

Mr. Venkajee.—That is only when continuous digestion is not done. We wait for some time after the first digestion is over. All that we mean is that the minimum time in which this can be done is 8 hours.

Mr. Rahimtoola.—You say the maximum output of your machinery is 5 tons of paper.

Mr. Venkajee.—That is the stated capacity of the makers.

Mr. Rahimtoola.—That has not been found by the Dehra Dun people who examined it.

Mr. Venkajee.—The Dehra Dun people always said that it is 3 tons, but I say it is 4 tons as we did it practically.

Mr. Rahimtoola.—That means you can produce 4 tons in spite of the fact your experts say that you can only produce 3 tons.

Mr. Venkajee.—That was the opinion based on the use of wood pulp and using it directly in the beaters. When Mr. Bhargava visited and expressed that opinion that only 3 tons could be made he did not take into consideration using the kollargang below which I used afterwards and brought down the time taken by the beater greatly to get the machine going with the supply of beaten stuff.

Mr. Rahimtoola.—Have you brought this to the notice of the Dehra Dun people?

Mr. Venkajee.—I don't exactly remember. I am in correspondence with them, but I don't know if I brought this to the notice of Mr. Bhargava. I wrote to him that we were working 24 hours.

Mr. Rahimtoola.—As regards the price per ton of bamboo delivered at the mill you have stated that at present it is Rs. 20 but you hope to get down to Rs. 18.

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—It is also true that you can of your own accord without the contract system bring down the price to Rs. 18.

Mr. Venkajee.—Even on ordinary loose purchase as we are doing it, we are getting at Rs. 120 per 1,000. Since we stopped that, these contractors are hanging on us and they told me that they would give it at Rs. 100 per 1,000. That came to Rs. 17.

Mr. Rahimtoola.—Can you account for this drop?

Mr. Venkajee.—Contractors take lease of the crops and they sometimes find no sale for bamboo. Further the timber market is very dull this year.

President.—What is the kind of bamboo that you use?

Mr. Venkajee.—Strictus.

President.—How many stems do you take per ton?

Mr. Venkajee.—6 tons per 1,000. The one we are having is a very heavy bamboo.

President.—What is the amount of moisture in the bamboo for which you pay Rs. 20?

Mr. Venkajee.—25 per cent. moisture.

President.—The bamboo for which Mr. Master estimated a price of Rs. 17 also contained 20 per cent. moisture.

Mr. Venkajee.—That would be a bit drier. It will be cut and laid on the river bed for a long time and wait for the coming of the river flood and rafted down the river when it is in flood. With reference to Mr. Master's statement about bamboo containing not less than 20 per cent. moisture, here is a statement of bamboos purchased from those forests at Polavaram, 18 miles from Rajahmundry and rafted down the river. That has come to 22½ per cent. dryage. That is the percentage of moisture as experienced by us.

Statement showing the weights of different Bamboos at the Mills' yard.

Quality.	Quantity.	Date of purchase.	Date of weighing.	Weight in 1st weighing.	Weight in 2nd weighing.	Decrease in weight.	Per cent. of weight lost.	Remarks.
Hill (Solid)	500	5-1-23	6-1-23	lbs. 6,709	This stack No. 1 is reweighed on 6-3-23 after 8 weeks drying.
Rafter Bamboos .	..	..	10-1-23	..	..	..	..
Deduct the proportionate weight of 20 bamboos missing.	20	..	..	268	..	..	..
	480	..	..	6,441	4,998	1,443	22½
Thorn Bamboos .	349	8-1-23	10-1-23	2,453	This stack No. 2 is reweighed on 7-3-23 after 8 weeks drying.
Deduct the proportionate weight of 4 bamboos missing.	4	..	..	28	..	..	..
	343	..	..	2,425	1,843	582	24

President.—You can take it at least at 20 per cent. moisture.

Mr. Venkajee.—It will be in all the bamboos. We only purchase on that general basis. We don't take whatever weight the contractor gives.

Mr. Boag.—You say you can turn out 4 tons of paper a day. Actually you are only turning out 20 tons a month?

Mr. Venkajee.—Yes, just at present.

Mr. Boag.—Why?

Mr. Venkajee.—That is because we have not sufficient finances to keep the mill going.

Mr. Boag.—It is simply due to lack of capital?

Mr. Venkajee.—Yes and nothing else.

Mr. Boag.—What does that mean? Does the mill work only for a week every month?

Mr. Venkajee.—It happens this way. It works from morning 6 to evening 6. It works like the Dehra Dun plant and then it stops.

Mr. Boag.—Even so if you are working 12 hours a day every day, you surely ought to be turning out more than 20 tons a month.

Mr. Venkajee.—There is not enough finance to keep all things in readiness.

President.—Mr. Boag's question is when you work, you work 12 hours at a time.

Mr. Venkajee.—Sometimes we don't work at all being forced to stop for so many reasons.

President.—For several days you don't work at all. 20 tons a month represents how many days work?

Mr. Venkajee.—6 to 10 days. Even that is spread over a period of 30 days.

Mr. Boag.—You are simply playing at the business at present.

Mr. Venkajee.—That is due to want of capital. Even last month I sent them an estimate for running the whole mill at 3 tons capacity. They say they are expecting money. I want so many tons of clay, rosin, etc. They say "we are waiting for money". It is just the capital trouble. We had only Rs. 6 lakhs from the shareholders and during the first one year of operation we had the trouble of experimenting with this plant and that plant and then the Dehra Dun people came in and they tried two or three experiments.

Mr. Boag.—You say that you have been in this mill since the building was put up.

Mr. Venkajee.—Yes.

Mr. Boag.—Why should it be necessary still to be experimenting? You have been working in the mill for 10 years.

Mr. Venkajee.—When I started, I started more as an apprentice fitter cooly. Those 10 years are only years of practical training.

Mr. Boag.—That has been so to speak your education period.

Mr. Venkajee.—Yes, I was in the mill or a few years. Then I was sent to Dehra Dun for training. After that I returned back to the mill. Then the mill was shut down. Then the Government of Madras sent me to foreign countries. Before I returned, Mr. Bhargava came and examined the mill and started some experiments.

Mr. Boag.—When you are speaking about the plant, you say some of it, especially the crusher was not suitable.

Mr. Venkajee.—Yes.

Mr. Boag.—Mr. Raitt visited the mill soon after the crusher was bought and condemned it. On whose advice was it originally bought? Do you know that?

Mr. Venkajee.—I could not tell you exactly on whose advice it was bought. It was purchased from Stebbins Engineering and Manufacturing Company.

Mr. Boag.—They designed the whole plant?

Mr. Venkajee.—Yes.

President.—Did they send out a representative to India?

Mr. Venkajee.—Yes, two representatives.

President.—When was it?

Mr. Venkajee.—In 1921 Mr. Powers came here. He stayed till 1922 and then went away. In 1923 Mr. E. P. Wood came and left the place in 1925.

Mr. Boag.—Did these people come out to erect the mill?

Mr. Venkajee.—Mr. Powers was an Erecting Engineer and Mr. Wood was the Chemical Engineer under whom I was an assistant and he tried the crusher. I know he didn't like it very much. I was then only an assistant and I could not say anything further on that subject to him.

Mr. Boag.—You say you are now getting bamboo from Gokavaram?

Mr. Venkajee.—Yes.

Mr. Boag.—Does that come from Government forests?

Mr. Venkajee.—Sometimes from the Government and sometimes from the private forests. It has got so many divisions and some is owned by the Rajah of Pithapuram.

Mr. Boag.—It is both Government and private.

Mr. Venkajee.—Yes.

Mr. Boag.—Have you any idea of the quantity of bamboo available there?

Mr. Venkajee.—About the Gokavaram forests I don't think there has been any survey or any special officer deputed to say anything about it. Here is a letter from Mr. D. T. Barry, Acting Conservator of Forests to the Managing Director of the Carnatic Paper Mills, Limited, dated 7th October, 1924. He says: "Attempts have been made to collect information from private traders on the points mentioned by you but I am not sufficiently sure of the reliability of the information to allow it to be issued. The contractor's figures regarding the number of bamboos removed are not reliable and do not show the weight of the bamboos either air dried or green. *Bambusa Arundinacea* (Mullam Bongu) is about 4 times as heavy as *Dendrocalamus strictus*, so I presume you will try and use as much as possible of the former; besides most of the latter species have flowered and died during the last 3 years. I anticipate that you will have to get some of the bamboos from the Gokavaram and Peddapur ranges and from the Papikonda hills of Polavaram Range". So it is only a rough estimate and not a detailed survey.

President.—As regards your proposals for the future, you want an extension of the protection now granted to the Paper Industry?

Mr. Venkajee.—Our submission is for the continuance of protection as it is at present and also for the inclusion of M. G. Kraft paper in the protective scheme.

President.—We will come to the Kraft paper later on. You want the protective duty of one anna a lb. on writing and printing papers to be continued for a period of 15 years?

Mr. Venkajee.—Yes.

President.—You want also the duty to be levied on M. G. Kraft paper, both genuine and imitation?

Mr. Venkajee.—On Kraft, Browns, Manillas and others.

President.—In addition to that you want an import duty on wood pulp?

Mr. Venkajee.—Yes.

President.—You are not in a position to say at what rate the duty should be fixed?

Mr. Venkajee.—On wood pulp, you mean?

President.—Yes.

Mr. Venkajee.—I would like to leave that matter to the Board for this reason. When I speak to you on this point about wood pulp, I would request you not to take the figures of the Andhra Mills, because our outturn has been very poor but take into consideration the industry as a whole. The wood pulp being admitted into India at a cheaper rate, the Managing Agents would be averse to manufacture any costly stuff.

President.—Supposing we decided to accept your suggestion about the import duty on wood pulp and we determined the measure of protection on the basis of costs attained by some of the bigger mills in this part of India, would that suit you?

Mr. Venkajee.—Yes. You cannot take our figures. I would ask you to take the cost of production of mills using grass and bamboo and bring the wood pulp to that level.

President.—Supposing it happened that after making reasonable estimates both on the price side and on the cost side it was found that there was no room for any protection; supposing the facts did not call for any protection.....

Mr. Venkajee.—You mean the cost of production of Indian pulp is equivalent to the cost of the imported pulp?

President.—Supposing that was the position?

Mr. Venkajee.—Then, I would have to withdraw.

President.—You would withdraw?

Mr. Venkajee.—Yes. On a production of 160 tons, I am not basing my arguments for any protection!

President.—Assuming on the facts it was found that a protective duty was necessary on imported pulp, do you want that duty to be introduced straightway? Supposing the Tariff Board decides to recommend the continuance of protection and in addition to that the Tariff Board says there should be a duty on imported pulp and the whole of our proposals come before the Legislature in, let us say, March 1932 and the proposals become law on the 1st of April, would you like the import duty on wood pulp to be made effective from the 1st of April 1932?

Mr. Venkajee.—Provided that you take guarantees from the Indian mills that they are trying to increase the production of their own pulp.

President.—Supposing we did take guarantees?

Mr. Venkajee.—Then, it should start as early as possible.

President.—Supposing the guarantors failed to fulfil their guarantees and the duty was in force—supposing there were eight mills and only four of them fulfilled and the others failed, what would you do under those conditions?

Mr. Venkajee.—I take it that there will be a proportionate increase in the duty on paper.

President.—Your point was that if we decided to levy an import duty on wood pulp it was necessary, before introducing the duty, that the principal paper mills should be asked to give guarantees that they would develop the use of bamboo. Is not that the point?

Mr. Venkajee.—Yes. There is another point and that is there must be a proportionate increase in the duty on writing and printing papers.

President.—You want a compensatory duty on paper?

Mr. Venkajee.—Yes, it has to be done; otherwise the cost of paper is immediately raised.

President.—If we decided to levy a duty of say Rs. 50 a ton on imported pulp, what kind of duty do you want on paper?

Mr. Venkajee.—That much difference in the price. Supposing the wood pulp is coming in at a certain price and the cost of the bamboo pulp is higher.....

President.—We compare the two prices and find that the rate of duty on wood pulp is Rs. 50 a ton. If Rs. 50 a ton is the rate of duty on imported pulp, what do you consider would be a fair estimate of the compensatory duty on paper?

Mr. Venkajee.—This Rs. 50 will have to show itself in the paper.

President.—The duty is Rs. 140 a ton and therefore you want Rs. 140 + Rs. 50 = Rs. 190.

Mr. Venkajee.—I don't quite follow the point. My point is this. As long as you do not allow the manufacturer to use the cheap pulp coming into India and force him to use the indigenous pulp, his cost will be increased at the rate of Rs. 50 per ton of pulp consumed and therefore he must be compensated to that extent in his price for paper.

President.—I understand the argument and for the moment I am accepting the general line of reasoning for the sake of argument. Supposing we decided to recommend a duty of Rs. 50 per ton on imported pulp, what do you consider would be the corresponding rate of additional duty which should be placed on paper in order to compensate the manufacturer for his increased cost of wood pulp?

Mr. Venkajee.—The same amount which would give a small percentage of loss for the loss of pulp when converted to paper.

President.—At present the duty is Rs. 140 on printing and writing papers. Supposing the Tariff Board decided to recommend the continuance of the duty and at the same time a duty of Rs. 50 per ton on imported pulp and taking your view of the case the Tariff Board decided to add another Rs. 50 to Rs. 140 to compensate the manufacturer for the increased cost of wood pulp, would anybody use anything but imported pulp?

Mr. Venkajee.—But we have taken the guarantee for the increased production of pulp from the Indian Mills.

President.—You get a protection of Rs. 190 a ton on paper. It would therefore be worth while for you to buy imported pulp at the duty paid price and yet make your paper at a profit?

Mr. Venkajee.—But there is the possibility of the Indian pulp being produced at the same rate and also at a cheaper rate in course of time.

President.—If you take the Rajahmundry mill, you cannot find enough money to buy your rosin, much less money for all the capital extensions that you need?

Mr. Venkajee.—I would request you to leave the Rajahmundry mill alone for this particular point.

President.—Supposing it was possible for you to buy imported pulp and put it through your paper machine and sell your paper at a price which corresponds to a price including the duty of Rs. 190, would you ever put yourself to the trouble of erecting a bamboo pulp plant?

Mr. Venkajee.—We will not. But you will take the guarantee even from the Rajahmundry mill that if a duty on wood pulp is levied, within a certain number of years—say 3 or 4 years—they should be ready to increase the pulp capacity of the mill and manufacture so many thousand tons of pulp per annum more than what they are producing.

President.—If you did not, would Government have a right of action against you?

Mr. Venkajee.—They would have to cancel the duty.

President.—Supposing 7 other mills are doing their best and you are the only offender?

Mr. Venkajee.—You will take the majority into consideration and decide the question.

President.—It is a simple proposition!

Mr. Venkajee.—If I give you my production cost as Rs. 450 per ton of paper, you won't take that as the average of the whole lot.

President.—This is your considered proposal that a duty on wood pulp is to be introduced and administered on these lines?

Mr. Venkajee.—Yes, with a proportionate increase in the duty on paper.

President.—That is to say, the whole amount of the duty on paper should be increased by the duty on pulp?

Mr. Venkajee.—I am not quite clear on the exact amount. I would not say the duty should be increased by the same amount.

President.—If it is not the same, what do you fancy? Tell me that.

Mr. Venkajee.—I thought that this point would be better dealt with by the Tariff Board who know more about these things during enquiry than myself.

President.—I will tell you a suggestion which has been made to us in this connection. It has been suggested that an import duty on wood pulp should be introduced subject to the following conditions: first, that a certain period of time should be allowed for existing mills to organise themselves for the larger use of bamboo pulp. Therefore if the duty is sanctioned, it should be regarded in the nature of a deferred duty which does not come into operation till a specified date, that is till the end of March 1934. Up to March 1934, all the existing mills would be allowed to import wood pulp at a rate corresponding to the average of their previous three years' consumption, and then from April 1934, the consumption of wood pulp that would be allowed free of duty would be reduced annually by 20 per cent., until at last they get a permanent allowance of 25 per cent. of imported wood pulp free of duty. Does that meet with your approval?

Mr. Venkajee.—I think that would be very good. If some time is allowed to the mills to adjust their machinery, it would be very good. As regards the question of 20 per cent. and such other things, I would leave it to the Tariff Board to decide on comparative merits.

President.—You are the people concerned. I want to know what your view is. Do the free allowances recommended in that scheme commend themselves to you? That is to say you will be allowed to import free of duty up to the average of the previous three years' consumption till 31st March, 1934 and in 1934-35 you will be allowed to import duty free 80 per cent., in 1935-36, 60 per cent., in 1936-37, 40 per cent. and then only 25 per cent. and the 25 per cent. will be a permanent free allowance. Does that schedule meet with your approval?

Mr. Venkajee.—I have no objection to that.

President.—Supposing we worked the duty on that basis and as regards the compensatory duty required, the free allowance starts with 100 per cent. and ends with 25 per cent. Approximately you would say that the average is 50 per cent. It is not an exact arithmetical calculation. If that schedule were in operation, the assumption would be that over a period of six or seven years, the mills would be using about 50 per cent. of imported pulp.

Mr. Venkajee.—I follow that.

President.—One assumption that you have to make in order to work out a definite proposal is that manufacturers would be tempted to make the utmost possible use of the free allowance.

Mr. Venkajee.—They will always do that.

President.—We assume that over the whole period they would be using an average of 50 per cent. of the total output of paper, because 50 per cent. would be made of imported pulp for that period.

Mr. Venkajee.—Yes.

President.—For argument's sake, we suggest Rs. 50 as the duty on imported pulp per ton. Rs. 50 per ton of pulp would mean per ton of paper Rs. 55. Since only half the output for the period is made of imported pulp half this figure, viz., Rs. 27½ is the additional compensatory duty that you require on paper. Assuming that the Tariff Board decided to recommend the continuance of the present duty of Rs. 140 per ton on paper, to that you would have to add a duty of Rs. 27½ to compensate the manufac-

turer for the increased cost of pulp. That would mean a duty of Rs. 167½. Does that scheme meet with your approval?

Mr. Venkajee.—It will work nicely.

President.—Do you think that your company would approve of a scheme on those lines?

Mr. Venkajee.—Yes. We would like to place before the Tariff Board the national point of view. At one time, there was an idea of closing the pulp section completely because it was costing us a good deal more to manufacture bamboo pulp. Our customers always ask us whether our paper is made from bamboo and if we say that it is made of foreign pulp, they ask us to take it away. So, we want the Tariff Board to give us the pep.

President.—Does this give you enough pep?

Mr. Venkajee.—Yes.

President.—On the facts disclosed if a duty of Rs. 140 is still required and if the compensatory duty is calculated on those lines, so far as your mills are concerned, you would not object?

Mr. Venkajee.—No.

President.—Have you made an estimate of the capital expenditure that would be required if you were to put into operation all the extensions that you propose?

Mr. Venkajee.—Rs. 10 lakhs.

President.—If you expended Rs. 10 lakhs that would bring your paper capacity to how much?

Mr. Venkajee.—14 tons.

President.—And a corresponding pulp capacity. Would you be able to get a sufficiently well balanced plant with a total production of 14 tons a day on an additional expenditure of Rs. 10 lakhs?

Mr. Venkajee.—14 tons of bamboo pulp and 14 tons of paper on the machine; I think we can balance all right.

President.—What is the proposal of your company with regard to additional finance?

Mr. Venkajee.—They have been trying to raise a debenture loan, but the money market is very tight; they also tried some of these financiers round about the place, but the trouble is this financial depression.

President.—Supposing on a review of the facts which have been brought to our notice in this enquiry we consider that there is no case for the continuance of protection and therefore the duty is put back to a revenue level and that recommendation was accepted by the Legislature, what would be the effect of that on your Company?

Mr. Venkajee.—Even with protection we have never made any profits so naturally without it we are out of the picture.

President.—If you wanted to put your mill on a reasonably economical basis you would have to make extensions costing Rs. 10,00,000?

Mr. Venkajee.—That is right.

President.—At present with a protective duty of one anna a lb. you are finding it extremely difficult to raise the necessary finance, and it is perfectly obvious to me that if protection were withdrawn it would be impossible for you to carry on. What is not equally clear to me is this that even if protection were continued whether you would be able to carry on, because with a protective duty of Rs. 140 per ton on paper you find it difficult to raise the additional finance that you require.

Mr. Venkajee.—That was mainly because these financiers did not know anything about paper.

President.—Would you be able to raise the additional share capital supposing this protective duty was extended for another ten years as has been proposed?

Mr. Venkajee.—That will surely tempt the investor, because he will be sure of protection and thus be encouraged to invest monies in the manufacture of Bamboo Pulp.

President.—Are you in a position to make any definite statement, supposing it was decided to levy a duty on imported pulp to give direct assistance to bamboo and a corresponding compensatory duty was put on paper would it make the position of the Andhra Paper Mills easier and enable them to make the extensions that are necessary for placing themselves on an economic basis?

Mr. Venkajee.—Decidedly. It is only a question of protection. Once it is there financiers will come up as soon as the stringency in the market is a little eased up.

President.—As far as this import duty on wood pulp is concerned, does that represent the considered opinion of your Directors or is it your personal opinion?

Mr. Venkajee.—They have seen the opinion expressed here and they agree with it.

Mr. Rahimtoola.—The scheme which you have put forward just now has been, I understand, discussed in a Directors' meeting?

Mr. Venkajee.—The scheme has not been discussed. The idea that there should be a duty on imported wood pulp with a proportionate reasonable increase in the duty on paper, that has been accepted by the management.

Mr. Rahimtoola.—But what about the question of guarantee?

Mr. Venkajee.—We did not go much into the details. We left it to the Board to go into the details and do what best they can.

Mr. Rahimtoola.—At present I understand you are making a loss of Rs. 60 per ton?

Mr. Venkajee.—That was Mr. Bhargava's estimate. Actual loss we won't know until we put depreciation and all these things on it.

Mr. Rahimtoola.—You have not worked out the figure yet?

Mr. Venkajee.—Total works cost we could not get owing to the delay in the audit, but recently we have had our own estimates which show that we would not incur any loss.

Mr. Rahimtoola.—Is the figure put forward by Mr. Bhargava not correct?

Mr. Venkajee.—I would not say it is not correct but the outturn he has taken is low. He says "with the existing plant production of about 1½ tons only is possible. This would put the firm to a net loss of nearly Rs. 60 per day". We have however made as much as 3 tons a day.

Mr. Rahimtoola.—As regards the question of finance also Mr. Bhargava differs from you. He says the finance required for producing 10 tons of paper per day would come to Rs. 17 lakhs nearly.

Mr. Venkajee.—That is including the Rs. 6,00,000 which we have already floated. That is a report he gave just when this Company took over the management of the mills.

Mr. Rahimtoola.—Has this report been discussed by the Board of Directors?

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—Then they must be in a position to contradict or substantiate the statement made there?

Mr. Venkajee.—I believe they approved the report.

Mr. Rahimtoola.—That is to say they considered Rs. 17 lakhs was necessary for an output of 10 tons. They also agreed that this sum would be less by Rs. 3 lakhs, if you bring the Assam machinery at a cost of Rs. 70,000 to Rs. 80,000 as stated in the report.

Mr. Venkajee.—He bases the production of the present paper machine as 2½ to 3 tons which I say is 4 and with the next machine we shall be getting 10 tons; that is how I am calculating 14 tons and the capital required

after what has already been spent is Rs. 10 lakhs. Already Rs. 4 lakhs have been spent in the acquisition of the mill and Rs. 1,50,000 on the necessary alterations and purchase of beater and other things.

Mr. Rahimtoola.—But I don't think that is the point of view of Mr. Bhargava. He recognizes the existing plant and machinery.

Mr. Venkajee.—He does recognise but he takes the outturn at 2½ tons whereas we have actually made 4 tons a day.

Mr. Rahimtoola.—You say you have manufactured large quantities of bamboo pulp by the soda process and you found that did not give a better yield and therefore you went over to the sulphate process?

Mr. Venkajee.—To get better colour.

Mr. Rahimtoola.—Did you explain this to Mr. Bhargava?

Mr. Venkajee.—I wrote to him and he also replied from the Institute. The sulphate process that we are now using is cheaper than the soda process.

Mr. Rahimtoola.—Is it your opinion that if the Board does not levy a duty on wood pulp the protection to the Paper Industry would not be justified?

Mr. Venkajee.—That is so.

Mr. Rahimtoola.—And you think that if a duty on wood pulp is not recommended the use of bamboo for pulp would be discontinued?

Mr. Venkajee.—It is not encouraging directly the bamboo industry.

Mr. Rahimtoola.—You know that the Fiscal Commission's conditions are that the principal raw material, in this case, bamboo, must be used by the mills, and your opinion is that in order to make them use this material a duty on wood pulp is desirable?

Mr. Venkajee.—That is what I meant by direct encouragement for using bamboo. For making Indian mills use bamboo as their main material the Tariff Board can give us direct encouragement by making imported wood pulp a little costlier.

Mr. Rahimtoola.—You want the duty, if protection is granted, to be applied to wrapping paper, kraft paper, envelope paper, poster paper and manilla paper?

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—May I know if they are at present manufactured in India, particularly M. G. papers?

Mr. Venkajee.—Manilla paper is not manufactured in India because there is no special M. G. machine.

President.—You have an M. G. machine?

Mr. Venkajee.—Yes.

President.—What is the capacity of it?

Mr. Venkajee.—5 tons a day.

Mr. Rahimtoola.—But you have not worked that machine?

Mr. Venkajee.—That is the machine we are using for white paper. Tariff Board put a duty on white paper and we get a better price for that class of paper. That is how we are meeting the local demand for white paper. In spite of so many defects in our paper we find that we are able to sell off our white paper. What I was requesting the Board in my representation is that if Government would put a duty on M. G. papers we will be the fittest person to manufacture these.

President.—Because your paper machine could be adapted to that very easily. It is really a machine intended for that?

Mr. Venkajee.—Yes. May I explain how the whole plant was organized? When Mr. Alwar Chetty ordered this machine he ordered a 10 ton bamboo pulp plant with the idea of manufacturing that amount of pulp at Rajahmundry. After that he ordered from Switzerland a particular machinery for the production of 5 tons of straw paper and kraft paper for which he got the small beaters, boiler, cutting machine and such other things

which are always useful and one cylinder machine. After the machine arrived at Rajahmundry he also wanted an arrangement to convert this into a white paper machine with the addition of two more cylinders, and the suppliers sent us two more cylinders to be added to it. When we made it into a white paper machine we found that the beating capacity was not enough; beating should take longer time with white paper whereas you can get the strawpaper out after an hours' beating. After Mr. Raitt came to visit the factory he condemned the idea of manufacturing 5 tons of strawpaper and instead of making 10 tons of pulp in a period of 24 hours he advised us to work the pulp mill to make 5 tons of bamboo pulp and use it on this machine to make 4 or 5 tons of paper. So that is how the whole thing has been carried on. Now, however bad might have been the start, the present management, Messrs. Mothey Pydah and Company, made the best use of the "Yankee" cylinder.....

President.—Your original design was essentially a pulp plant for making a certain amount of wrapping paper?

Mr. Venkajee.—Not exactly, 10 tons of good strong pulp from Bamboo and 5 tons of nice wrapping paper from Straw.

President.—Incidentally when the Godavari is in flood are you able to get fairly good bleached paper?

Mr. Venkajee.—Yes. We settle our water with chemicals, but it would cost us a good lot for alum and other stuff.

President.—That is for how many months in the year?

Mr. Venkajee.—Three months nearly.

President.—Supposing the Tariff Board decided to extend the protective duty to packing paper then what would be your immediate plan of action?

Mr. Venkajee.—We would manufacture kraft paper to the extent of 5 tons a day. That would give us a better line than the white paper business.

President.—You have made wrapping paper from bamboo; did you try to put that on the market?

Mr. Venkajee.—Yes, and it was purchased by many. We have sold a good lot according, of course, to our outturn.

Mr. Rahimtoola.—It is your opinion then that you will not be able to manufacture these papers unless they are protected?

Mr. Venkajee.—We can manufacture but not on a remunerative scale.

President.—Do I understand that you manufactured these classes of paper?

Mr. Venkajee.—Yes. We have manufactured these browns sufficient to know for ourselves whether it can compete with the imported ones in which there is this extra glaze on one side. In our paper one side is more smooth, as you might have noticed.

President.—You have made kraft paper?

Mr. Venkajee.—I will explain. If the cylinder had been used alone without using the other cylinders being put into operation you would find the kraft coming out with one side rough and the other side nicely glazed.

Mr. Rahimtoola.—I understand that your present machines are so equipped that if protection is granted to the classes of paper you have mentioned you would immediately start manufacturing them?

Mr. Venkajee.—We are the fittest persons to manufacture M. G. paper in India because we have the Yankee machine.

Mr. Rahimtoola.—You have sent us a statement from the Officer in charge of the Paper Section of the Dhera Dun Institute, in which the Forest Department consider that the paper of your mill is superior from the various kinds of tests made by them to any other mills at present manufactured in India, is that correct?

Mr. Venkajee.—Yes.

Mr. Rahimtoola.—Having given a reply to the Chairman regarding the finances that you are intending to get, I suppose you withdraw your proposals which you have made to the Board that the Government should guarantee the capital.

Mr. Venkajee.—No. The question comes this way. The last Tariff Board recommended to the Government to give us Rs. 10 lakhs to get us on the move and we have not received any assistance from the Government for their own reasons. The new management have been looking forward for that help from the Government as it found it not possible to get money from the public so readily. This new Company was started only 2 years back and has had to contend against much experimental work and yet made good progress; and still is suffering from lack of finance and it has taken 1½ years to come to this stage of working condition.

Mr. Rahimtoola.—You have just now told us that provided protection is continued and is given for a definite number of years you would get your finances readily in the market.

Mr. Venkajee.—This Company was started in 1920. Since 1920 these shareholders have put in their money and since 1921 they have been waiting for dividends. In 1927 the Company had to go into voluntary liquidation. They had to pay again Rs. 60 to claim their old shares. I said in reply to a question from the President money would come in readily provided protection was continued or there was an assurance from the Government that protection would be continued, but I feel that if only the tightness of the market is not in our way, we shall easily get the money from the investing public.

Mr. Rahimtoola.—Do I understand that if the Government does not guarantee, the money will not be easily available?

Mr. Venkajee.—If Government guarantees.....

President.—It is all the better.

Mr. Venkajee.—If Government does not guarantee, we will have to try and devise our own methods to make the market yield a little bit to us, but that of course will take time.

Mr. Rahimtoola.—Whether the protection is granted or not, the financial position of the Company which exists to-day will remain the same.

Mr. Venkajee.—No, it won't. If the Government does not give us any guarantee of help, we will take a few months more, but if the Government gives a guarantee of help, there is no question of delay at all. The Indian capitalists, as you know, since its inception till the new management came in, have been round about that place and looked at this mill as a white elephant of the country, as it was not working.

Mr. Rahimtoola.—The Carnatic Paper Mills never worked the mill.

Mr. Venkajee.—No.

Mr. Rahimtoola.—Then what is the complaint?

Mr. Venkajee.—The complaint is that the money is sunk in the mill since 1921. The shareholders have put in the money and have not received any return since that time. Another thing I wish to point out to the Board is that the shareholders of the Andhra Paper Mills are not like the shareholders of any big company with vested interests. They are small shareholders. There are about 6,600 shareholders who have put in Rs. 100 each with the anticipation of getting a return immediately, but the Company had not been able to declare any dividend for the past 11 years and this has created a very unfavourable impression in the minds of the shareholders. If Government gives the guarantee of help next year, we will be all right. But if they don't guarantee, we don't say that we will be standing still, but we will try and get the finance and there is every prospect of getting it in view of the continuance of protection.

President.—Why don't you approach the Madras Government?

Mr. Venkajee.—To tell you the honest truth we made an attempt before and another attempt recently. At first they said it was a case of a cat

having burnt its fingers. This time, if protection is guaranteed, they won't say so and may give it. It all depends on the Tariff Board. The Tariff Board must give us the protection and then the Government must give the guarantee of help. I may say in this connection that this is the only mill in the Madras Presidency. It is near such big markets as Nizam's Dominions; it can easily supply paper to the Nizam's State Railways, the Madras and Southern Mahratta Railway and there is also the local consumption. If such a mill is not to be guaranteed, which other mill is to be guaranteed?

Mr. Rahimtoola.—What exactly you meant when you said that your mill is not working on vested interests?

Mr. Venkajee.—When I said “vested interests”, I meant in the case of the Andhra Paper Mills there are not 5 or 10 people putting in Rs. 10 lakhs. It is not like a big concern where substantial people invest a lot of money and become Directors or Managing Agents. In the case of the Andhra Paper Mills there are innumerable small shareholders.

Mr. Boag.—There are some large shareholders.

Mr. Venkajee.—Only one—Rajah of Pithapuram owning one lakh of rupees worth of shares. He is the only man who has got the biggest interest in the business.



Punjab Pulp and Paper Mill Limited, Lahore.

Letter dated 14th August, 1931, from Mr. Kashi Ram, late Director, Carey & Company, Limited, Managing Agents and Director of the Punjab Pulp and Paper Mill Limited, Lahore.

With reference to the correspondence ending with your telegram dated 7th August, 1931, I have the honour to inform you that Punjab Pulp and Paper Mill Limited, which was incorporated in March, 1927, took over Punjab Paper Mill Limited, which was incorporated in 1923 and was in existence at the time of your last enquiry in 1924-25.

As initiator, promoter and originator of the Punjab Paper Mill Scheme, I had made a written representation to your Board at the last enquiry to protect the paper made both from bamboo which was a potential supply and grass which was and is being used on a very large scale and on the supply of which I had organised my scheme.

The evidence that was laid before your Board during the last enquiry was that grass was not available in sufficient quantity for further developments and the then existing mills were fighting one another to obtain supplies and it was no use granting protection to the industry that has no possibility of further development. You however very rightly gave protection to paper produced from grass and bamboo and you expressed hope in your report that this protection to paper made from grass might result in the establishment of paper mill near Saharanpore which is a centre of grass. Your hope I am glad to say materialised and a Paper mill was established near Saharanpore.

The foundation stone was laid in 1927 and the mill started making paper in 1929, but unfortunately closed down in April, 1930, and went in liquidation in June, 1930.

This is most unfortunate as I had worked nearly 10 years on the scheme in order to establish this mill but various causes have led to its fall and this matter may come before the Court. I cannot therefore give details of the causes but will mention main reasons why it closed down so early—

- (1) The amount of block expenditure reached double the figure to one I originally estimated, namely, instead of 50 lacs it went up to 80 lacs.
- (2) The incapacity of the mill to give full output after its completion and consequent inability to meet expenses for the time it was working.
- (3) Shortage of working capital.
- (4) Heavy overhead charges.
- (5) Frictions between the Europeans and the Indians sections of the Board.
- (6) Inefficiency of some of the imported supervising staff.

These were the main causes that have lead to the closing of the factory. I may however be able to give detailed information in camera if I am asked to do so, but I regret I cannot do so in this letter.

I am however making efforts to restart the mill either on the basis of lease during the liquidation or by reconstructing the Company but this is yet in early stages and nothing can be said whether any of the schemes will materialise or not.

You will see from the above that the mill worked for about 10 months during which time output was not even 1/3rd what was specified and therefore it is exceedingly difficult to answer your questionnaire in detail.

Had it not been for the above causes the mill would never had stopped and the Company would never had failed, as no mill is better situated than this mill from the view points of raw materials that is grass, rags and

chemical stores, markets, i.e., Lahore and Delhi. It would have made a reasonable profit had it been working and would have amply justified its establishment.

That it will be restarted and show good result both from quality point of view of the paper and dividend point of view of the investors I have no doubt, convinced as I am of its possibilities.

I am therefore making this representation in the interests of the paper from grass. The available quantity of grass for making paper round about this mill is:—

	Lacs of maunds.
1. Sewalik ranges of the western circle of the Forest Department in the United Provinces	6
2. Hills of Kalsiar, Kalsia, Sirmoor Kalka side	2
That is total	8

within very near reach of paper mill costing not more than one to Re. 1-4 per maund at the mill.

You will thus see that raw materials are enough for two Paper mills of the size of the Jagadhri Paper Mill and the Paper mill established at Jagadhri can meet the requirements of Northern India much more conveniently and economically than Paper mills from Bombay, Calcutta and Madras.

You will realise that India is a very big country, each Province is equal if not bigger to many of the first class European countries. Each province has its own climate and physical features. For instance very little bamboo grows in the Punjab and yet very little paper-making grass in Bengal and Burma, but to make paper in Burma and import into the Punjab or *vice versa* by Rail is an economic impossibility compared to the imported stuff from Europe. So the case of protection has to be so determined that manufacturer from different raw materials growing in different provinces and capable of full provincial development and requirements are protected equally and sufficiently. The mills situated in Bengal, namely Titaghur and Bengal Paper Mill, can have also enough grass for their use until they develop their bamboo resources from:—

	Lacs of maunds.
1. Nepal, Tehri	nearly 4
2. Sahibganj	2
3. Eastern circles of the United Provinces and other areas	1

So grass alone is sufficient to meet the immediate requirement of the present Paper mills until the resources of the bamboo are made available. I am therefore of opinion that the Title of the Act should be renamed as Paper Protection Act and not Bamboo Paper Protection Act.

During the last 7 years that the protection has been given the pulp consumption of mechanical pulp glazed paper has considerably increased to the disadvantage of Local Industry and therefore it is necessary that higher duty should be levied on such papers which are in appearance more or less like the country made paper whether the imported paper consists of 65 per cent. of mechanical wood pulp or more or less.

A further development during the last 7 years has been that the Paper mills situated on sea coast such as near Calcutta are importing very large quantity of wood pulp which again is detrimental to the development of the Local Raw Materials and therefore when giving protection to Paper, the

Government should make it a point that at least 75 per cent. of the raw materials used shall consist of indigenous products so that the full development of local raw materials may take place.

In my view the industry still requires protection until the raw materials available near the locality of the each mill and in each province are so fully developed and made use of that the price of raw materials goes down to an extent which will enable the Paper mills to manufacture paper at costs which will compare favourably with the imported paper. Until that stage of development reaches which Board should insist on the Paper mills to arrive at within the next 10 years facilities which are now given, if withdrawn will ruin the industry and should therefore be continued.

If I am asked to give further information, I shall be glad to give as much information as is in my possession or is available from the Liquidators' office.

