

**REPORT**  
**OF THE**  
**Indian Tariff Board**  
**REGARDING THE**  
**GRANT OF PROTECTION**  
**TO THE**  
**PLYWOOD AND TEA CHEST**  
**INDUSTRY**



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# Report on the Ply Wood and Tea Chest Industry.

## CHAPTER I.

### Introductory.

1. The subject of this enquiry was referred to the Board by the Government of India under Resolution No. 483-T., dated the 26th May, 1927, the terms of reference being as follows:—

Terms of Reference.

1. " The Assam Saw Mills and Timber Company, Limited, and the Assam Railways and Trading Company, Limited, have requested the Government of India to refer to the Tariff Board for enquiry the question whether the Ply Wood and Tea Chest industry in India should be protected.
2. There was no import duty on tea chests and lead sheets for tea chests until 1916. A duty of  $2\frac{1}{2}$  per cent. was imposed in 1916 for revenue purposes, and this was raised in 1923 to the general rate of 15 per cent. It was then recognised that this increase of duty would incidentally assist the manufacture of tea chests in India, but an assurance was given by the Hon'ble the Commerce Member in the Legislative Assembly that an increase of duty would not have been proposed for protective purposes without a previous investigation by the Tariff Board.
3. Imported tea chests and lead sheets for tea chests are ordinarily re-exported as containers for Indian tea and are then entitled to a refund of seven-eighths of the import duty under Chapter VI of the Sea Customs Act, provided that they are identified to the satisfaction of the Collector of Customs, and that the re-export is made within two years from the date of importation. Such identification may sometimes be possible, but would cause much trouble and delay both to the Customs administration and to the re-exporter. In view of the special circumstance that tea chests and lead sheets for tea chests are ordinarily imported for the purpose of subsequent re-export, the continuance of a revenue duty may be open to objection.

4. The Government of India have therefore decided to refer the following questions to the Tariff Board:—

- (1) Whether, having regard to the principles laid down in the resolution adopted by the Legislative Assembly on the 16th February, 1923, the ply wood and tea chests industry should be protected;
  - (2) If so, in what form and for what period protection should be given;
  - (3) If not, whether, in view of the fact that tea chests and lead sheets for the chests are ordinarily imported for the purpose of re-export, the existing import duty of 15 per cent. should be continued.
5. Firms and persons interested, who desire that their views should be considered by the Tariff Board, should address their representations to the Secretary, Tariff Board, Shillong, before the 15th June, 1927."

2. At present three factories in India are engaged in the manufacture of ply wood, *viz.*:—

- |                           |  |
|---------------------------|--|
| The claim for protection. | <ol style="list-style-type: none"> <li>(1) The Assam Saw Mills and Timber Company, Limited.</li> <li>(2) The Assam Railways and Trading Company, Limited.</li> <li>(3) The Jalpaiguri Timber and Lead Mills Company, Limited.</li> </ol> |
|---------------------------|--|

In response to this Resolution applications for protection were received from the first two of these. The former claimed that the existing duty of 15 per cent. *ad valorem* on imported tea chests should be maintained, that drawback on re-export of the chests should be disallowed and that a bounty at the rate of 4 annas per chest should be granted to the Indian industry. In the alternative it was suggested that drawback should be disallowed and the *ad valorem* duty raised to 25 per cent., the measure of protection being calculated on the price for imported boxes (Rs. 3-7-0 for the standard size 19" × 19" × 24") existing at the time the application was drafted. In addition, it was proposed that the Assam Government should assist the industry by the enumeration of trees suitable for the manufacture of ply wood and by development of plantation work. A considerably higher scale of protection was claimed by the Assam Railways and Trading Company. This firm represented that the import duty of 15 per cent. *ad valorem* on tea chests should be retained and legislation undertaken to prohibit the payment of drawback on the re-export of tea chests, that the duty on casein and alkalies used in the manufacture of glue should be removed and that a bounty at the rate of 6 pies per square foot of ply board equivalent to a bounty of 9 annas on the standard tea chest (19" × 19" × 24") should be granted to the Indian industry. Should the drawback system be maintained, it was requested that the

bounty should be raised to 9 pies per square foot of ply board equivalent to  $13\frac{1}{4}$  annas for each full sized tea chest. At a later stage in the enquiry, a representation was received from the Jalpaiguri Timber and Lead Mills Company, Limited, which recently purchased the properties of the Buxa Timber and Trading Company and the Bengal Lead Mills Company. It was suggested that the industry should be granted protection by means of a bounty at the rate of 9 pies per square foot of ply wood produced, or in the alternative an increase in the present duty of about 15 or 20 per cent., no drawback being allowed on the re-export of tea chests.

3. After examining the Conservator of Forests, Assam, at Shillong on the subject of the available supplies of timber suitable for the industry, the Board visited the ply

Location of the factories.

wood factories of the two companies in that province. The works of the Assam Saw Mills and Timber Company, which at present manufactures ply wood for the construction of tea chests only, are situated at Murkong Selek on the river Brahmaputra in the Sadiya Frontier Tract of Assam, some 30 miles to the north-east of Dibrugarh. Supplies of timber are obtained from the forests in the direction of Pasighat and also from the Poba area, portions of which have been leased to the company for a period of thirty years. Transport of timber is by water from the former area and by a tramway constructed by the company from the latter area. The factory of the Assam Railways and Trading Company at Margherita in the Lakhimpur District of Assam is served entirely by the company's own railway, viz., the Dibru-Sadiya Railway, and supplies of timber are obtained from forests in the Lakhimpur Frontier Tract which are held under lease for ten years from the Assam Government. Coal is obtained from the company's own mines which are within easy reach of the works. The ply wood factory recently purchased by the Jalpaiguri Timber and Lead Mills Company, Limited, was originally erected by the Buxa Timber Company at Rajabatkawa in the Jalpaiguri district of Bengal. The factory is served by the Eastern Bengal Railway and the company holds leases over the adjoining Rajabatkawa forest working circle for a period of thirty-three years.

4. Questionnaires were issued both to manufacturers in India and to importers of ply wood and tea chests, and copies of these questionnaires were forwarded to the Indian Tea Association. On the 27th July, the Board issued the following communiqué:—

“The Government of India has directed the Indian Tariff Board to investigate the question of granting protection to the Ply Wood and Tea Chest industry in India. The Board has issued questionnaires in this connection to the manufacturers in India of ply wood and tea chests, to the importers of these articles, and to the Indian Tea Association and proposes to hear the oral evidence of persons or firms interested in Calcutta, during the month of August. Any persons or firms not receiving copies of the questionnaires but who may wish to send in representations to, or to give oral evidence before, the Board, are invited to send such representations and to signify their desire to give oral evidence to the Secretary, Tariff



Board, at No. 1, Council House Street, Calcutta, before the 10th August next."

Replies to the questionnaire were received from manufacturers and from the following firms of importers:—

- Messrs. Davenport and Company, Limited.
- Messrs. McLeod and Company.
- The Planters' Stores and Agency Company, Limited.
- Messrs. Williamson, Magor and Company.
- Messrs. Gladstone, Wyllie and Company.
- Messrs. James Finlay and Company, Limited.

A representation was also received from the Indian Tea Association, Messrs. Smith, Stanistreet and Company, Limited, Rajgarh Tea Company, Limited, and Messrs. J. Mackillican and Company, while in response to the Board's communiqué, the Jalpaiguri Timber and Lead Mills Company submitted a claim for protection in the form of a reply to the questionnaire. In addition to the evidence recorded at Shillong, the following firms and associations were examined orally at Calcutta:—

- Assam Saw Mills and Timber Company, Limited.
- Assam Railways and Trading Company, Limited.
- Jalpaiguri Timber and Lead Mills Company, Limited.
- Indian Tea Association.
- Messrs. Williamson, Magor and Company (Agents for Venesta, Limited).

The evidence of a representative of the Customs Department on the administrative aspect of protection for the Tea Chest industry was also taken. After recording evidence in Calcutta, we visited Dehra Dun and inspected the experimental ply wood plant which has been installed at the Forest Research Institute and examined the Forest Economist and his staff.

5. We desire to acknowledge the courtesy with which we were received by the Inspector General of Forests and the authorities of the Institute in the course of our visit and the great assistance which we derived from their co-operation and advice. We are indebted to the Indian Tea Association for the manner in which they have assisted us in this enquiry and for the information, not otherwise readily available, which they have supplied at our request. We desire also to record our appreciation of the promptness and thoroughness with which the manufacturers responded to our request for information while we are also indebted to the importers of tea chests, in particular to Messrs. Williamson, Magor and Company who besides replying fully to our questionnaire, deputed one of the partners of the firm to give oral evidence before us.

6. Chapter II of this report gives a description of the process by which ply wood is made, Chapter III discusses the question of the suitability of the industry in India for protection, Chapters IV and V the amount of protection required and the way in which we recommend it should be given, while Chapter VI contains various supplementary proposals, our opinion with regard to the period during which the industry needs protection, and a summary of our findings and recommendations.

## CHAPTER II.

## Process of manufacture. History of the Industry in India.

7. Although the art of veneering dates from very early times, until recently its use was restricted to ornamental purposes. The

Ply wood defined. preparation of the plies was a laborious operation, and it was not until the invention of the circular saw towards the close of the 19th century and still later of rotary cutting, that the commercial possibilities of ply wood became apparent. The term "ply wood" is used to describe a combination of several plies or pieces of veneer glued together, usually so that the grain of any one ply is at right angles to the adjacent ply or plies. It is this arrangement of the grain of the several plies with the resultant balancing of stresses which constitutes the chief commercial advantage of ply wood over solid boards. Even properly seasoned wood tends to shrink or swell according to climatic conditions, and the expansion and contraction take place mainly across the grain. The arrangement by which the plies are glued together so that the grain of each is at right angles to that of the adjoining ply, tends to ensure permanency of size and shape, since the expansion or contraction of each ply is prevented by the cross grain of the ply or plies affixed to it. For similar reasons, ply wood affords greater resistance to the stresses involved in all forms of bending or torsion. The strength of the plies is also increased by the glue with which they are joined together, since this sinks into the wood and acts as a binder to the fibres, while at the same time rendering the wood, if not waterproof, at any rate less liable to saturation.

8. It follows, therefore, that weight for weight ply wood resists the strains encountered in ordinary use to a greater extent than

Uses of ply wood. solid boards. Mr. R. S. Pearson in a note on the manufacture of ply wood states "As regards the strength of three ply wood, it may be taken that a  $\frac{5}{8}$  inch thick ply board is approximately equal to a 1 inch thick plank of the same timber."\* It has, therefore, been generally adopted where lightness and strength are required. The most obvious purpose for which these qualities are required is in the manufacture of aeroplanes and, both during and after the war, ply wood has been used in increasing quantities for fusilage and wing construction. Commercially, perhaps, the most important use of ply wood is in the manufacture of packing cases. With the increase in railway and ocean freights, it became a matter of considerable importance to the commercial community that receptacles for merchandise should be as light as possible consistent with the required degree of strength. As material, therefore, for the manufacture of

\* See Appendix B to Mr. H. G. Norman White's Report on certain indigenous timbers of India, Burma and the Andamans considered suitable for Railway carriage-building, 1924-25.

tea chests, opium chests, rubber boxes and travelling boxes of various kinds, ply wood has replaced the common wood boards. Its advantages for ornamental purposes are also being increasingly recognized. With a thin veneer of more costly or more decorative wood covering plies of wood of more ordinary quality, the same effect can be achieved at less cost. Where, as in India, extremes of temperature and great variability of atmospheric conditions prevail, ply wood, being less liable to crack or to warp, is particularly suitable for the panelling of rooms. Many of the panels in the Legislative Assembly building in Delhi are of ply wood manufactured experimentally at the Forest Research Institute, Dehra Dun, the chief woods used being rose wood, teak and shisham, and we have been informed that these have successfully resisted the effects of the severe test imposed by the variations in temperature and climatic conditions. On the score of durability alone, therefore, it seems probable that the use of ply wood for ornamental purposes will steadily increase in India, particularly for the panelling of rooms and railway carriages and for the manufacture of better quality furniture of all kinds.

9. The raw materials required for the manufacture of ply wood are two, *viz.*, timber and glue or cement. Almost any kind of wood can be veneered and such different kinds as oak, gum, poplar, birch and fir are in common use for this purpose in Europe, while in India at the Forest Research Institute, Dehra Dun, we have seen veneers prepared from the following kinds of Indian woods, *viz.*,

- Padauk (*Pterocarpus macrocarpus*).
- Teak (*Tectona grandis*).
- Blackwood (*Dalbergia latifolia*).
- Laurel (*Calophyllum inophyllum*).
- Sissoo (*Dalbergia sissoo*).
- Toon (*Cedrela toona*).
- Chikrassi (*Chickrassia tabularis*).

This list is by no means exhaustive. Mr. U. C. Wilson, Forest Economist, Dehra Dun, states it as his opinion that "given proper treatment, almost any timber other than the *mesua* type of hardwood or the excessively soft spongy species, will peel on a rotary lathe and make up ply wood of varied qualities." Birch and alder are the woods most frequently employed in Europe for the manufacture of panels for tea chests. In India, Hollock (*Terminalia myriocarpa*), Hollong (*Dipterocarpus pilosus*) and Simul (*Bombax Malabaricum*) have been proved suitable for this purpose. Simul and hollock are both used by the Assam Saw Mills and Timber Company, Limited, simul almost exclusively by the Jalpaiguri Timber and Lead Mills Company, Limited, and hollong by the Assam Railways and Trading Company, Limited. The last named company, however, uses a variety of woods for the manufacture of panels for railway carriages and for the walls and ceilings of

houses, the chief kinds being hollong, hollock and makai (*Shorea Assamica*).

10. Glues may be divided into four classes, *viz.*, vegetable, animal, blood albumen, and casein glues. Vegetable glue consists of a mixture of starch dissolved in a solution of caustic alkali. This is probably the most economical of all glues. A serious disadvantage in its use lies in the fact that the veneers must be thoroughly dry before the glue is applied; further, it is susceptible to the action of moisture and for this reason is less suitable to the manufacture of chests which are likely to be exposed to such action. Animal glue is manufactured from hides and other waste products of the meat industry. It is not waterproof and is subject to the action of heat. Since it must be applied hot and brought under pressure within five minutes of application, its use requires special care. Blood albumen is also a by-product of the meat packing industry and is sold in dry form. Mixed with water, ammonium hydroxide and hydrated lime, it forms a very satisfactory glue with high water resistant qualities. It is essential, however, that this glue should be set under hot pressure and the expenditure on the steam heated platen presses necessary for this purpose, adds considerably to the cost. The only kind of glue used by manufacturers of ply wood in India at present is casein glue. Casein is the albuminoid constituent of milk. When skim milk becomes sour, casein is deposited in the form of curds. After separation, it is cleaned, dried and ground to powder form. Casein is produced in considerable quantities in the Bombay Presidency and there is some export trade in it, the amount exported in 1926-27 being about 12,000 cwts. The other constituents of casein glue are an alkali—frequently caustic soda—and lime in some form. The glue so formed sets quickly and must be used fresh, since after a few hours of exposure to the air it thickens and becomes useless. Hot pressure is not essential, though this system is employed by the Assam Railways and Trading Company and is claimed to give exceptionally good results. When dried, casein glue resists the action of water and heat to a very marked degree, and is particularly suited for the manufacture of ply board required for tea chests or other articles subject to exposure under varying atmospheric conditions.

11. There are three methods of converting logs into veneer in use at the present time, namely by sawing, by slicing and by rotary cutting. Of these the last named is by far the most general; and in 1923, 92 per cent. of the veneer produced in America was cut in this manner.\* The first two methods are employed for the production of highly ornamental panels from the rarer and more costly woods and are not suitable for the production of ply wood on a large scale for commercial purposes. Rotary cutting is the only system employed in the ply wood factories in this country and we propose, therefore, to

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\* Page 341, Veneers and Ply Wood by Knight and Wulpi.

confine our description of the process of manufacture to this method.

12. After the trees have been cut and logged into suitable lengths, the logs are transported to the mill either by rail or by water. They are then cut by a cross cut

The rotary lathe. saw into the required sizes for the lathe and are either steamed or boiled to soften the texture of the wood so that they may be cut on the lathe with less risk of tearing or breaking the veneer. The bark is next removed and the log lifted into position in the lathe by means of a crane. It is fixed in position by means of chucks which are forced into the ends of the log so that there shall be no play or movement when the log is rotated. Since the heart of the wood is usually unsuitable for the manufacture of ply wood, care has to be exercised to see that the chucks are placed in the centre of the heart, which does not always correspond to the centre of the log. Carelessness or lack of attention in this respect results in a much reduced output of ply per cubic foot of log. The log is then rotated in the lathe so that it is turned against the edge of a knife placed horizontally and adjusted according to the thickness of ply required. A thin and continuous strip of ply or veneer is thus peeled off and flows out in a wide sheet. Two spur knives, against which the log is rotated in advance of the cutting knife, determine the length of the ply, measured with the grain.

13. As the sheet of veneer leaves the lathe, it falls on to a travelling table and is thus conveyed to the clipper, where the

Clipping and drying. sheets are arranged in book form and chopped into the required width. The veneers are then treated in a wringing machine where they are pressed, partly to improve the surface and partly to reduce the moisture content as a preliminary to drying. The system of drying employed varies considerably from simple sun drying out of doors to treatment in the recently produced progressive platen dryer. The machine commonly employed for this purpose, which is in use in the works of the Assam Saw Mills and Timber Company, is the roller dryer. This machine is some 100 feet long. The sheets of veneer are passed into the dryer at one end and travel between steam heated revolving cylinders until they are delivered at the other end of the machine in a dry condition. Until the veneers are thoroughly dried, no attempt is made to cut them to the exact size required, since in the drying process considerable shrinkage occurs. When cut into sizes in the clippers before drying, a margin for shrinkage is allowed. After drying, the veneers are sawn or cut in a clipper to the required size, a margin of one inch being allowed for final trimming after gluing.

14. Mechanical spreaders are used for gluing, the veneer being passed between corrugated rollers on which an even layer of glue

Gluing and pressing. is maintained. For three-ply board, the centre ply only is passed through the mechanical spreader, while for five-ply board the second and fourth plies

are similarly treated. As each glued ply leaves the rollers it is placed between two other unglued plies and is then ready for treatment in the hydraulic press. Here the ply board is pressed and clamped. After removal from the hydraulic press, it remains clamped and under pressure for a period varying from 12 to 24 hours, and is then finally trimmed by means of multiple saws. After being again dried, the surface of the boards is smoothed off in a sanding machine and the finished ply board is then ready to be sent to the packing room.

15. We should explain that two distinct processes are in general use for setting the glue between the veneers, namely, the hot and cold process. In the latter, which is employed by the Assam Saw Mills and Timber Company, Limited, the veneers are subjected to pressure in a hydraulic press, the glue being allowed to dry under ordinary atmospheric conditions. In the former, which is in use in the works of the Assam Railways and Trading Company, the veneers are pressed in a steam heated platen press. It is probable that the ply wood thus produced is less susceptible to the action of damp and water. On the other hand, the process is probably somewhat more expensive, while the fact that the ply wood has to be pressed singly, seriously restricts the output.

16. For the manufacture of tea chests, six panels of three-ply wood are required. The sizes of tea chests in common use in India are as follows:—

Size.	Contents in lbs. of tea.
19" × 19" × 24" . . .	120 lbs. Orange Pekoe.
19" × 19" × 22" . . .	110 lbs. Broken Orange Pekoe.
18" × 18" × 20" . . .	100 lbs. Fannings.
16" × 16" × 20" . . .	90 lbs. Dust.
16" × 16" × 18" . . .	80 lbs. Dust.

The interior of the chest is strengthened by eight wooden battens and in some makes by four corner pieces. These are, as a rule, cut from the heart of the log, which is unsuitable for veneering and when the chest is assembled are wrapped in grease proof paper. The chest is lined with a lead or aluminium lining. The Assam Railways and Trading Company uses the latter which is imported, but the remaining two companies use lead linings. These are manufactured in India out of lead imported from Burma at the following mills:—

The Kamarhatty Lead Mill.

The Triangle Lead Mills Company, Limited.

The Jalpaiguri Timber and Lead Mills Company, Limited.

The Planters' Stores and Agency Company, Limited.

All joints in the panels are covered with strips of tin plate, terne plate or in some cases black metal nailed in position. These

fittings are at present manufactured in India out of imported material. The Assam Railways and Trading Company fabricates its own fittings; the remaining companies obtain them from firms in Calcutta. Tea chests are not turned out from the ply wood factory complete and ready for use, but in sections. The various parts, panels, battens, fittings, linings, nails are despatched to the tea garden and are there assembled when required.

17. Until comparatively recently, tea was exported in chests made of planks or shook boxes as they are called, sawn from Indian wood. Originally these shook boxes were made

Shook boxes. by hand sawyers, but later a number of saw mills were established and a flourishing local industry grew up. As late as 1912, 73 per cent. of the requirements of the Assam tea gardens were supplied by locally made country shook chests. During the war, the supply of ply wood from Europe was interrupted and the saw mills were fully employed in meeting the demands of the Tea industry. It was inevitable, however, that on the conclusion of hostilities, the three-ply chest should supplant the local shook chest. We have already referred to the advantage in the matter of freight resulting from the lightness of the ply board panels. A ply wood tea chest weighs between 16 to 18 lbs. whereas a country shook chest weighs about 28 lbs. The difference in freight is, therefore, considerable. But apart from this, ply board is relatively stronger than solid cut board and is less susceptible to atmospheric conditions. Whereas in the country shook box a 4 oz. lead lining was necessary to assist in withstanding strain, it has been found possible to use a 2 oz. lead lining in the three-ply box, thereby effecting considerable economy. The use of the three-ply box has, therefore, been continually increasing, and while in 1906-07 the value of such boxes imported into India was not more than Rs. 23½ lakhs, by 1924-25 it had risen to Rs. 90 lakhs, falling again in 1926-27 to Rs. 62 lakhs.

18. During the war, the price of imported veneer boxes rose rapidly and considerable difficulty was experienced in meeting the demands of the industry. It was obviously

Establishment of three-ply factories in India. a matter of great national importance that the shipment of tea should be maintained, and in 1917, at the request—as we are informed—of the Munitions Board, the Surma Valley Saw Mills determined to undertake the manufacture of ply wood and obtained a first class certificate of priority for the import of the necessary plant. In the next year, the Assam Saw Mills and Timber Company was floated and was granted a thirty years' lease for the extraction of timber from the North-east Frontier Tracts provided that the company erected an up-to-date veneer factory within two years. A similar condition appears in the lease of the Buxa Timber and Trading Company which erected a veneer mill in the Jalpaiguri District of Bengal shortly after the flotation of the Assam Saw Mills and Timber Company. Both this company and the Surma Valley Timber Company failed to achieve success, partly on account, of the difficulty of



obtaining satisfactory glue during the war, but mainly because insufficient care was exercised in selecting the timber for the manufacture of veneer. Timber of many different varieties was used for this purpose with the result that the tea chests varied considerably in strength, while in some cases the timber used was unsuitable and imparted a taint to the tea. Uniformity of quality was thus sacrificed and the tea chests produced acquired a bad reputation in the market. Both these companies went into liquidation, but the works of the Buxa Timber and Trading Company have recently been acquired by a new company, the Jalpaiguri Timber and Lead Mills Company, Limited, and the manufacture of ply wood has been recommenced under Indian management. The most recently established veneer works is that of the Assam Railways and Trading Company at Margherita on the Dibru-Sadiya Railway. The company holds leases from the Assam Government for the extraction of timber from extensive forests in the Lakhimpur District and from the Upper Dehing Reserve of the Lakhimpur Frontier Tract. The machinery was ordered in 1922 and operations commenced in 1924. Unlike the other companies, which produce ply wood almost exclusively for the manufacture of tea chests, this company produces ply board for use in the panelling of rooms and railway carriages and has so far produced comparatively few tea chests, the maximum attained in any one year being approximately 40,000 chests.

## CHAPTER III.

**Suitability of the industry for protection.**

19. Our terms of reference require us to determine whether having regard to the conditions laid down by the Fiscal Commission, the Ply Wood and Tea Chest Industry should be protected. These conditions are three, *viz.* :—

Conditions laid down by the Fiscal Commission.

1. The industry must be one possessing natural advantages, such as an abundant supply of raw material, cheap power, a sufficient supply of labour or a large home market.
2. The industry must be one which without the help of protection either is not likely to develop at all or is not likely to develop so rapidly as is desirable in the interests of the country.
3. The industry must be one which will eventually be able to face world competition without protection.

20. The Ply Wood industry covers a wide range of products but in India the principal market for ply wood at the present stage arises from the demand of the Tea industry for three-ply chests. In discussing the conditions laid down by the Fiscal Commission with reference to the Ply Wood industry, we propose, therefore, to confine our attention to tea chests. Other forms of ply wood such as opium chests, rubber chests and panels constitute less than 2 per cent. of the present output of the industry and the question of protection in their case is consequently of much less practical importance. The very limited market which exists in India at present for articles made of ply wood other than tea chests, necessarily restricts the extent of foreign competition. Our examination of import prices has satisfied us that in the case of practically every article except tea chests, the Indian manufacturer is able to compete at present prices with imported ply wood. It follows, therefore, that although in many respects the considerations applicable to tea chests apply equally to other forms of ply wood, the fact that these do not require protection renders it unnecessary to include them in a discussion of the conditions laid down by the Fiscal Commission.

21. The most important raw material required in the industry is timber. Most kinds of timber can be veneered and in this country for the more ordinary kinds of ply wood several species have been found to give satisfactory results at the Forest Research Institute, Dehra Dun, *viz.*, *Bombax Malabaricum*, *Tetrameles nudiflora*,

First condition : Supply of timber.

*Eudospernum chinense*, *Trewia nudiflora*, *Alstonia scholaris*, *Anthrocephalus cadamba*, *Dipterocarpus pilosus*, *Terminalia myriocarpa*, *Chickrassia tabularis* and *Cedrela toona*. From the latter two species, ply wood for ornamental purposes is also produced. But the variety of trees which can be used for the manufacture of ply wood on a commercial scale is limited. For the production of an article like tea chests the quantity of wood required is necessarily large. A factory producing 5 lakhs of tea chests a year needs approximately 10,000 tons of timber in the log on the basis of 1 cubic foot per chest, taking this as an approximate average for all sizes of tea chests. The timber growing in the vicinity of the factory is, therefore, quickly exhausted and it becomes necessary to go farther and farther afield so that if the species of tree in use grows sparsely and at scattered intervals, the cost of extraction soon becomes prohibitive. To ensure adequate supplies of timber at a reasonable price, it is clearly desirable that the tree should not only be plentiful, but should grow in fairly compact blocks or otherwise be easily accessible. Moreover, it is necessary that the logs to be veneered should be as cylindrical as possible so as to ensure that the veneer is peeled off in a constant stream. If the logs are knotty or irregular in shape, there is great waste in trimming them down and the costs are increased accordingly. There is another factor in the Tea Chest industry which restricts the choice of timber. Tea is very liable to be tainted by proximity to any substance with a distinctive smell and the timber for tea chest panels has, therefore, to be very carefully chosen. The importance of this is illustrated by the failure of the Surma Valley Company, which may be attributed largely to the use of holoichuckie timber, considered for this reason unsuitable by the tea trade for use as panels of tea chests. Finally, in a new industry, it is important that the standard of the manufactured article should be uniform, and this result is not likely to be attained at present if several kinds of timber are used in the manufacture of tea chests. It is possible that in the future chests of a uniform quality may be manufactured from different timbers or a combination of different timbers, but the matter is one which obviously calls for extensive research and investigation.

22. The present position is that, apart from the more valuable species, the veneers of which will always command a high price for ornamental purposes, the trees which have been proved most suitable for the manufacture of ply wood are three, viz., Hollock (*Terminalia myriocarpa*), Hollong (*Dipterocarpus pilosus*) and Simul (*Bombax Malabaricum*) and we propose to confine our attention to these woods. At the outset, we think it desirable to explain that the material at our disposal is so scanty as to render it impossible to estimate the available supplies of timber in the areas in which ply wood factories have been erected with any degree of accuracy. Although in Bengal complete working plans have been drawn up for the Buxa forest, where the Jalpaiguri Timber and

Suitable trees for veneering.

Lead Mills Company, Limited, operate, no such plans have been drawn up by the Assam Forest Department for the areas leased to the Assam Saw Mills and Timber Company and the Assam Railways and Trading Company, nor has any enumeration of the trees been undertaken save for a partial enumeration of hollock in the Pasighat area of the Sadiya Tract. We make this statement by way of explanation and are not to be understood as implying any remissness on the part of the Forest Department. For we are aware that, until comparatively recently, the areas where the two companies operated had not been explored at all and it was not until after the Abor expedition of 1911 that it was possible to enter the forests without escort. Further, in the past the market for these kinds of timber has been restricted and the expenditure involved in enumeration would have been hardly justified. Simul, too, grows in a very scattered manner save perhaps on the grass lands on the banks of the Brahmaputra and any accurate estimate, even had enumeration been undertaken, would manifestly be a matter of great difficulty.

23. Hollock (*Terminalia myriocarpa*) is a large evergreen tree, found in Assam, the Khasi Hills, Manipur and Upper Burma.

Hollock. The wood is medium hard and of a brownish colour. Hollock occurs in fairly compact blocks and we have been informed by the Conservator of Forests, Assam, that the areas where this tree grows most densely are those leased to the Assam Railways and Trading Company and the Assam Saw Mills and Timber Company. The latter company, on the basis of the report on the Enumeration Survey of the Sadiya Forest Division, estimates that the total amount of hollock available in the areas leased by them is approximately 140,000,000 cubic feet. It may be mentioned that the experience of the company in this area has tended to confirm the general conclusions based on this enumeration and the estimate has also been accepted by the Conservator of Forests, Assam, as not excessive. The company states that hollock matures in fifty to sixty years and this statement is considered by the Conservator as reasonable. For a period of sixty years the annual supply would be about 23 lakhs cubic feet and this at 1.12 cubic feet for a tea chest, which is the figure taken in our estimate of works costs, would give an annual outturn of 20 lakhs of tea chests of the standard size 19" x 19" x 24". We have no means of judging the amount of hollock in the areas held by the Assam Railways and Trading Company, but it would appear from the oral evidence\* of the Conservator of Forests that approximately an equal quantity of hollock would be available from this source.

24. Hollong (*Dipterocarpus pilosus*) is an extremely tall evergreen tree frequently attaining a height of 100 feet. It has a long cylindrical stem, free of branches to a considerable height, and is, therefore, particularly suitable for veneering. The wood is light red and moderately hard. The tree is found in Assam, Chittagong, Arakan and

\* See Evidence Volume.

Burma. As regards supplies we extract the following from Mr. R. S. Pearson's note on Hollong timber\* :—

Forest Division.	Estimated future annual outturn.	REMARKS.
<i>Lakhimpur—</i>		
i. Upper Dehing Reserve :—		About 75,000 c.ft. extracted in last five years. The D. F. O. puts 415,000 c.ft. as an absolute minimum and states that the figure could be greatly exceeded without excessive cutting.
West Block .	150,000 c.ft.	
East Block .	90,000 c.ft.	
ii. Jaipur Reserve .	75,000 c.ft.	
U. S. Forests .	*100,000 c.ft.	
	415,000 c.ft.	* Cutting over a 20 year period, total amount available being 2 million c.ft.
North-east Frontier Tract.	Stated to occur in abundance.	Not extracted at present.
Sibsagar . .	20,000 c.ft.	61,000 c.ft. extracted during last five years.

These figures although based on information supplied by local forest officers, are by no means authoritative and should be regarded merely as general indications of the available supply. The Assam Railways and Trading Company holds leases over areas in the Lakhimpur Frontier Tract and the adjoining forests in the Lakhimpur District. They also hold a lease over the Upper Dehing Reserve East and West Blocks, but at present this area is not being worked.

25. Simul (*Bombax Malabaricum*) or cotton tree is one of the commonest of Indian trees. It is very widely distributed and is found throughout India and Burma. With its distinctive red flower, buttressed base, and long straight bole, this tree is unmistakable and is moreover so

\* See Forest Bulletin No. 39.

well known that any further description is unnecessary. It seeds profusely and natural regeneration is good, particularly on thin grass lands along the banks of streams. Growth is rapid but varies according to the locality. In favourable conditions a girth of from 5 to 6 feet may be attained in 30 years. In his note on Simul\* published in 1921 Mr. C. E. Cox gives the following annual outturns:—

Province.	Division.	Annual outturn.
Assam . . . . .	Lakhimpur . . . . .	15,000 c. ft. which is expected to rise to 500,000 c.ft.
	North-east Frontier Division.	500,000 c.ft.
Bengal . . . . .	Jalpaiguri and Buxa .	5,000 c.ft.

As regards Jalpaiguri and Buxa, Mr. Cox remarks "Simul forms the bulk of the crops over about 10 square miles. The species is spreading rapidly and has been put out in experimental plantations". Simul is particularly susceptible to injury from forest fires and we find from the Working Plan report of the Buxa Forest Division, that a system of fire protection was not successfully introduced until 1905. Consequently, there are few trees dating back before this period. Simul being a quick growing tree, it is probable that supplies will rapidly increase in the future being assisted by the planting operations which have been undertaken in the Rajabhatkhawa working circle, where the areas held by the Jalpaiguri Timber and Lead Mills Company are situated. Mr. E. O. Shebbeare, Conservator of Forests, Bengal, informs us that in the areas leased to the Jalpaiguri Timber and Lead Mills Company the annual outturn of Simul may be taken at 80,000 cubic feet over a cycle of ten years. Artificial reproduction has also been carried out to a considerable extent in the Lakhimpur District of Assam and by 1916, 458 acres had been planted. Further plantation was carried out in 1917 and 1918. The greater part of this plantation was carried out near Murkong Selek, where the Assam Saw Mills and Timber Company's factory is situated, and the trees first planted are expected to come to maturity in about fifteen years from the present time.

26. The present output of Indian made tea chests is rather under 4 lakhs annually; there is also an output of about 100,000 square feet of ply board for panels. For this about 460,000 cubic feet of timber in the log is required. The annual demand of the Tea industry for chests, calculated on the production of tea at an average of 100 lbs. of tea per chest, is about 33 lakhs. There is also a small but increasing demand for ply board

\* See Forest Bulletin No. 44.

for other purposes. The available supplies of wood in the areas adjacent to the existing factories may be summed up as follows:—

	Cubic feet.	REMARKS.
Hollock . . . . .	4,600,000	Assuming equal annual outturn in the areas leased to the Assam Saw Mills and Timber Company and the Assam Railways and Trading Company.
Hollong . . . . .	400,000	<i>plus</i> the supplies in the North-east Frontier Tracts which are said to be plentiful.
Simul . . . . .	600,000	Taking the minimum figures in Mr. Cox's table <i>plus</i> Conservator of Forests' estimate of supplies in Rajabhatkhawa working circle.
	5,600,000	

This would be sufficient for the manufacture of about 50 lakhs of tea chests. It is true that this supply is not equally accessible to all the three factories now working and a portion of it is probably not extractable, but it appears to us that the figures are sufficient to justify the conclusion that the supply of timber is not only ample for the needs of the industry at present and in the immediate future, but that there is a reasonable probability that the industry will not be prevented by the lack of raw material from eventually meeting the whole demand of the home market.

27. Next in order of importance of the raw materials required by the industry is casein from which the glue is made. Casein is manufactured in India chiefly in the Bombay Presidency, and about 12,000 cwts. annually are at present exported. This amount would be sufficient to provide glue for some 17 or 18 lakhs of tea chests of standard size. About 33 lakhs of chests annually are required by the Tea industry, while at present the number of chests manufactured in India is about 4 lakhs. There is also a small production of ply wood for the panelling of rooms and railway carriages. There is thus an ample supply of Indian casein to meet the present demands of the ply wood manufacturers, and there is no reason to suppose that even if in course of time the whole needs of the country in respect of ply wood were supplied by Indian production, the supply of Indian made casein could not be expanded to meet the requirements of the industry.

28. There are at present four factories in India engaged in the manufacture of linings for tea chests from lead produced in Burma and of these the Triangle Lead Mill alone is capable of producing 4,000 linings a day. Fittings and linings. Tinsplate is manufactured at Jamshedpur by the Tinsplate Company of India out of tin bar supplied by the Tata Iron and Steel Company and although at present tea chest fittings are being manufactured from tinsplate imported from abroad, we see no reason why, if the demand is sufficient, it should not be met by the Indian company. It will be seen, therefore, that with the exception of tin for the manufacture of tinsplate and possibly certain alkalies for the manufacture of casein cement, all the raw materials required by the Tea Chest industry are available in India.

29. The other factors referred to in the first condition laid down by the Fiscal Commission are cheap power, a sufficient supply of labour and a large home market. With the closing down of many of the saw mills manufacturing country shooks, the labour force previously employed in this industry has become available for the manufacture of ply wood. In this respect there has been no complaint and no scarcity of labour in the future is anticipated. Power is generated by steam and ample fuel is available. A considerable quantity of cuttings, trimmings, bark and waste ply are accumulated in the course of manufacture and these are utilized as fuel together with firewood from the leased areas for which a nominal fee is charged; in addition, the Assam Railways and Trading Company and the Jalpaiguri Timber and Lead Mills Company use a proportion of coal. The former obtain their coal from their own collieries situated in close proximity to the factory; the latter import from Bengal. The incidence of fuel charges is already very low amounting to some 7 pies per box in the case of the Assam Saw Mills and Timber Company and we anticipate that this will be further reduced to about 4 pies with a reasonable extension of output. The export of tea from India in 1926-27 was 350,857,002 lbs. and we have been informed by the Indian Tea Association that the production may be taken at 370 million lbs. Allowing on the average 100 lbs. of tea for each chest, this production would require 37 lakhs of boxes. A proportion of tea, however, is still packed in shook boxes. We are informed by Messrs. Bird and Company that it is doubtful whether the group of saw mills under their control could at present sell 1½ lakhs of shook boxes. We think, therefore, that the allowance suggested by the Indian Tea Association for tea packed in shook boxes, viz., 10 per cent. of production, provides an ample margin. It follows that the Indian tea trade requires some 33 lakhs of boxes annually. At present the Assam Saw Mills and Timber Company produces approximately 3 lakhs, the Assam Railways and Trading Company about 40,000 and the Jalpaiguri Timber and Lead Mills Company about 16,000. The home market for tea chests alone is, therefore, ample not only for the present output of the companies but also for any future increase, and should



also be sufficient to absorb the production of any additional factories which may be established.

30. The second condition laid down by the Fiscal Commission raises the question whether the manufacture of tea chests requires

Necessity of protection for tea chests.

protection if it is to develop at all or develop so rapidly as is desirable. The need for protection will become more apparent when we discuss the question of the cost of production and of the price at which foreign chests can be imported. Meanwhile, the main features in the present situation which constitute a *prima facie* case for the extension of some assistance to the Tea Chest industry may be briefly indicated. As with so many industries, the post war period has been one of intense competition for the Tea Chest industry, especially in the markets of Northern India, where most of the tea gardens are situated. Finland which holds the first place among ply wood exporting countries, increased its export from about 13,000 tons in 1920 to about 44,000 tons in 1925 and the production now, if the mills recently opened are producing to capacity, cannot fall far short of 90,000 tons annually. Esthonia, Russia and other countries exporting ply wood have also increased their output. Competition in the markets of the world has been intense and prices have been reduced to a minimum. For example, the prices of the well-known Venesta chests, perhaps the best known chest on the market, in 1924 stood at Rs. 4-10-0, fell to Rs. 4-0-0 in the following year and now stands at about Rs. 3-6-0.

31. Two factors have combined to render possible the large decrease in tea chest prices in recent years, namely, the extension of mass production methods in Europe and the

Reasons for increased competition.

increase in the demand for ply wood for other purposes. Some of the works in Finland turn out as much as 9,000 tons of ply wood a year, while the maximum output as yet attained by an Indian factory does not exceed 2,000 tons. Apart from the reduction in the cost of raw materials resulting from the extraction of wood and purchase of other materials on a large scale, enhanced production must also result in a substantial fall in the cost of supervision and the overhead charges. Concurrently with the increase in production there has been a steady expansion in the use of ply wood for the manufacture of various articles, such as cheap baskets, chair seats and hat boxes. By utilizing the smaller pieces of veneer for the manufacture of such products, most of the veneer produced can be utilized. Waste is thus minimized and costs reduced.

32. With the advantages in these respects which European factories at present possess over their Indian competitors, it will be

Need of assistance to Indian industry.

impossible for the Tea Chest industry in this country to hold out much longer against foreign competition without assistance. The largest of the existing companies, the Assam Saw Mills and Timber Company, has not declared any dividend since 13th September, 1920, and the continuance of the company has only been ren-

dered possible by the fact that the Managing Agents, Messrs. Bird and Company, have foregone not only their head office expenses and commission, but even interest on the working capital which they have advanced. Neither of the other two companies have produced tea chests at a profit during the past season since when there has been a still further fall in price. We consider, therefore, that in spite of natural advantages it is unlikely that the industry would develop or even survive unless protection is granted. It is convenient to consider at this stage an objection which may be brought to the grant of protection to the manufacture of tea chests. It may be argued that if, with the exception of tea chests, Indian ply wood products can be sold at a profit, as stated in paragraph 20 above, by directing more attention to the profitable lines of business, the industry should be able to carry on without protection. It must, however, be remembered that apart from tea chests the market for ply wood in India is at present very small. The average annual number of ply wood opium chests ordered during the last three years is only 8,000, while even if the mango wood boxes used by the Opium Department were entirely discarded in favour of ply wood this would add but 11,000 chests to the annual demand. The export of rubber in 1926-27 from India was about 26 million lbs. The weight of rubber contained in a standard box is about 220 lbs. If ply wood chests were used exclusively for rubber export, rather over one lakh of chests would be required. It is impossible to estimate even approximately the extent of the demand for other forms of ply wood, but we are satisfied that at present the market is limited. Further, if ornamental ply wood is to be produced on any considerable scale, much previous investigation will be necessary, particularly into the question of the suitability of various timbers and their supply. At the present time, one company sells a small portion of its output for panelling, and with this exception the total Indian manufacture of ply wood is confined to tea chests. It is obvious, therefore, that unless the companies can dispose of their tea chests at a profit, the industry within a short period will cease to exist. At the same time, we consider it a matter of some importance that manufacturers should not confine their attention to the construction of ply wood for tea chests only. At present the use of ply wood in this country is in its infancy, and it is clearly desirable that manufacturers should endeavour to develop and extend the market in every direction. The qualities of ply wood which particularly fit it for use in India, namely, its ability to withstand severe climatic conditions, have not as yet been sufficiently recognized. In these circumstances, any increase in price such as would arise from a protective duty, would tend to restrict its use and we consider this an additional reason for excluding from our protective scheme all forms of ply wood except tea chests.

33. The third condition laid down in paragraph 97 of the Fiscal Commission's report requires that the industry should eventually be able to face world competition without protection. We believe that this condition also is fulfilled. Apart from the fact that in

Third condition of Fiscal Commission.

India overheads are somewhat larger owing to the freight and duty on machinery and the cost of supervision being higher, foreign ply wood makers enjoy no natural advantage over Indian manufacturers. It is true that the timber which they use—birch or alder—gives better results. The yield depends largely on the cylindrical shape of the log, but partly also on the absence of knots and cracks. We understand that the better grade birch logs yield as high as 75 per cent. of their scale in usable veneer, whereas in Indian factories 30 per cent. is considered a fair result. The difference is in part explained by the fact that much of what in this country is waste, is in Europe converted into cheap articles such as fruit baskets. On the other hand, the price of birch is much in excess of Indian timber. The Assam Saw Mills and Timber Company at our request cabled for the latest quotations for birch logs and received in reply a price of 1s. 1d. to 1s. 4d. per cubic foot f.o.b. London. Against this the price of Indian wood is about 5 annas at factory. Taking into consideration both price and output, it appears that the European manufacturers enjoy no marked advantage in this respect. Their ability to compete in the Indian market depends largely on two factors, namely the increase in their output and the extent and variety of the market for their production. These are the initial advantages which an established industry possesses over a new and struggling industry. Time is required to extend the demand for ply wood articles in India, but when this is developed and the Indian manufacturer has consolidated his position in the home market, there is no reason why he should not be able to reduce his cost of production, and in particular his overhead and supervision charges to such an extent as to meet competition from abroad on equal terms. It will be seen from the discussion of costs and prices in Chapter IV, that the gulf between the fair selling price and the price of imported chests is even now not very large. We have indicated two directions in which the Indian manufacturer can reduce his costs, namely by further increase in output and by utilization of his waste veneer if other uses for ply wood are developed in India. But there are other directions also in which the industry may be able to improve its position. We have no means of ascertaining the cost of manufacture of tea chest panels in Europe, but it is by no means unlikely that this industry in common with other industries in the post war period, has been forced by competition to cut its profits to a very low figure. If this is so, in the course of time, more normal conditions will return and the need for protection will diminish. Nor can the possibility of some increase in the cost of timber in Europe and America be entirely ignored. Should this eventuate, the price of imported ply wood will also increase.

34. We have indicated the main reasons which lead us to think that in due course the industry will be able to stand without protection. Before leaving the subject of the suitability of the industry for protection, we desire to state that in our opinion the Ply Wood industry, besides fulfilling the main conditions laid down by the Fiscal Commission, has a claim to public support on the ground

Other grounds for assisting the industry.

of its importance from a national point of view. In the first place, it is an industry which has a direct military value. At the present time, the wings and fusilage of aeroplanes are largely constructed of ply wood and we see no reason why, if necessity arose, these could not be constructed in India. Secondly, during the war the maintenance of the Ply Wood industry for the supply of tea boxes was considered a matter of vital importance from the point of view of the Empire as a whole. An increase in the production of tea chests was strongly urged both by the Government of Assam and by the Munitions Board and it was mainly as a result of the difficulties experienced during the war in maintaining the supply, that the manufacture of ply wood was first undertaken in India. It is obvious that the dependence of this country on outside sources for the supply of tea chests might in certain circumstances give rise to very considerable inconvenience both to the military authorities and to the civil population.

35. Our general conclusion is that the Ply Wood industry not only fulfils all the conditions laid down by the Fiscal Commission but has also other claims to consideration and that, while at present there is no need to grant protection to the manufacture of ply wood for other articles, unless support is afforded to the Tea Chest industry, it cannot maintain itself in the face of foreign competition.

## CHAPTER IV.

## Measure of Protection.

36. In the last Chapter we have found that the Tea Chest industry satisfies the conditions laid down by the Fiscal Commission and qualifies for assistance from Government. It remains to consider what measure of protection is needed. Following our usual method of enquiry, we propose to determine what we consider to be a reasonable cost of production, allowing for manufacturer's profit and overhead charges, and by comparison of this with the landed prices (excluding duty) of imported chests, to arrive at our conclusion as to the amount of protection required. Of the three factories at present in existence, that of the Assam Saw Mills and Timber Company is the only factory which is capable of attaining almost immediately and without any considerable addition to plant, an economic unit of production. This we estimate at 5,00,000 chests per annum or about 2,500 tons of ply wood which is the capacity of the smaller ply wood factories in Finland. The Assam Railways and Trading Company at present produces some 40,000 tea chests and also ply wood for other purposes sufficient for the manufacture of an additional 8,000 chests. Its plant, however, is somewhat ill balanced. The two hot presses in which the ply board after the gluing process is pressed and dried, have not sufficient capacity to deal with all the veneer which the lathes could produce and the total maximum outturn is claimed to be 1,95,000 chests per annum. The works of the Jalpaiguri Timber and Lead Mills Company have only recently recommenced work and their output so far has been inconsiderable, while their maximum annual capacity is stated to be some 3,00,000 chests. The present works costs of these two companies are unduly high, and it is obvious that they would afford but little assistance in determining what should be a reasonable cost of production in the future. Further, as regards overhead charges and manufacturer's profit, the Assam Railways and Trading Company has adopted the hot process of pressing and would require in consequence a far more expensive plant for an annual production of 5,00,000 chests than would the Assam Saw Mills and Timber Company. Provided the chests of the latter company are of satisfactory quality, as the evidence which we have received indicates, it would be unreasonable to burden the consumer or the general taxpayer with the additional charge which the use of the more expensive plant would render necessary. We have, therefore, decided to base our estimates on a consideration of the works costs and overhead charges at the Assam Saw Mills and Timber Company's factory and of the cost of replacement of their plant. Our decision has been explained to the other two companies, and they agree that there is nothing unreasonable in this method of procedure.

37. The largest item in the overhead charges is depreciation of plant. But before either this or manufacturer's fair profit can be determined, it is necessary to decide what it would cost to erect at the present time a factory capable of producing 5,00,000 tea

Cost of replacement of plant.

chests annually. We have been informed by the Assam Saw Mills and Timber Company that their factory as at present equipped can manufacture some 45,000 chests per month or 5,40,000 a year. The total capital expenditure of this company on fixed assets without allowing for depreciation is Rs. 18.11 lakhs. Most of the machinery, however, was purchased in America in 1918 and 1919, when prices stood at a very high level, and in considering the present cost of replacement, allowance must be made for changed conditions. In our report on the Tinsplate Industry\* we found that the replacement value of the Tinsplate Company's plant and equipment which was ordered in America in 1920 before any substantial decline of prices had occurred, was Rs. 89.8 lakhs, the figure at which it stood in the company's books being Rs. 161.8 lakhs. It appears to us that if we reduce the block account of the Assam Saw Mills and Timber Company in the same proportion, we shall arrive at a figure which will give a very fair indication of the present cost of replacement. Our valuation on these lines is approximately Rs. 10 lakhs. The Assam Saw Mills and Timber Company has, at our request, drawn up an estimate of the present cost of erecting a factory capable of producing 5,00,000 tea chests a year. This estimate is based on the latest quotations which have been obtained by the firm from Europe and America by cable. The details of this estimate are given in Supplementary Statement No. 20.† Their figure (Rs. 10.30 lakhs) agrees very closely with our estimate, and we think we may safely take Rs. 10 lakhs as the present cost of a factory capable of producing 5,00,000 tea chests annually.

38. Our attention has been called to an estimate of the capital cost and running charges for a ply wood factory producing 2,40,000 tea chests annually which appears on page 54 *et seq.* of the Report on the progress and proposed future expansion in the utilization of the forest resources of Madras by Mr. J. Kenneth Pearce. We have carefully considered this estimate which we deal with at length in Appendix A, and it is sufficient here to state that we find no grounds for reconsidering the conclusion at which we have arrived. We consider that an estimate of Rs. 10 lakhs for a ply wood factory producing 5,00,000 chests annually is not excessive and we propose to calculate the overhead charges on this basis. At 6½ per cent., which is the rate adopted by us in other enquiries, depreciation would amount to Rs. 62,500 annually, which on a production of 5,00,000 chests annually gives an incidence of 2 annas per chest.

39. Normally, in an industry of this kind where the raw materials are obtainable locally, comparatively small stocks have to be carried and the working capital required should be small. The demand for tea chests is, however, seasonal, and during a portion of the year large stocks of finished panels are accumulated. The average value of stocks of chests, stores and outstanding debts of the Assam Saw Mills and

\* Chapter XVI, Volume I, Steel Report, 1926.

† See Evidence Volume.

Timber Company, Limited, is about Rs. 3,39,000. The company at present manufactures about 3,00,000 chests annually. If the output is raised to 5,00,000 chests, it is claimed that about Rs. 1,50,000 additional working capital would be necessary. The total would then be Rs. 4,89,000. This represents the value of about four months' production at estimated works costs, which we consider not unreasonable. The Assam Saw Mills and Timber Company obtains an overdraft from the Imperial Bank of India at 1 per cent. above bank rate and we are informed that the interest on working capital averages about 6 per cent. per annum. It appears unlikely, however, that money could be borrowed by an ordinary manufacturer over an extended period at this rate. It was stated in evidence that the Jalpaiguri Timber and Lead Mills Company, Limited, borrowed at 9 and even 12 per cent. and in the case of the Steel industry we found that 7 per cent. per annum was a fair rate. We see no reason, therefore, to take a lower rate than 7 per cent. per annum for the Tea Chest industry. This on a working capital of Rs. 4,89,000 would amount to Rs. 34,230 giving an incidence of 1.1 annas per chest on an output of 5,00,000 chests a year.

40. Messrs. Bird and Company as Managing Agents receive an allowance of Rs. 9,000 per annum, in return for which they pay the Head office charges, etc. salaries of head office staff, rent, etc. This allowance has been foregone by the Managing Agents since 1922. In addition, they are entitled to a commission of 10 per cent. on the profits of the company before depreciation has been allocated. Taking depreciation at  $6\frac{1}{4}$  per cent. and profit at 8 per cent. on the capital cost which we have allowed (Rs. 10 lakhs), this would amount to Rs. 14,250, giving a total of Rs. 23,250 in all. We find the Calcutta charges alone without including the Managing Agents' remuneration at present actually incurred on account of the Assam Saw Mills and Timber Company, Limited, amount to about Rs. 19,000 annually. We think, therefore, a provision of Rs. 23,250 on this account is not unreasonable and may be accepted. The incidence per chest amounts to annas .75 on an output of 5,00,000 chests.

41. In our report on the Steel industry, we found that 8 per cent. per annum was a fair all round return on capital invested and there appear no special circumstances which would justify a higher rate for the Ply Wood industry. On a capital valuation of Rs. 10 lakhs, an annual profit of Rs. 80,000 is thus required which gives an incidence of annas 2.56 per chest. On an output of 5,00,000 chests annually, the overhead charges and manufacturer's profit will, therefore, be as follows:—

	Per chest annas.
Depreciation . . . . .	2
Interest on working capital . . . . .	1.1
Head office and other charges . . . . .	.75
Manufacturer's profit . . . . .	2.56
	<hr/>
TOTAL . . . . .	6.41
	<hr/>

42. The Assam Saw Mills and Timber Company has supplied information as to their works costs under the detailed heads set forth in the questionnaire issued by the Board. The figures given are for the standard 19" x 19" x 24" tea chest which represents about half the total production of the company. On an output at the rate of 3,00,000 chests per annum, which is the present production, the works costs per chest for 1927 are given as Rs. 2-12-11. In the course of the oral examination, we drew attention to the possibility of reduction in costs on increase in production to 5,00,000 chests annually and the representatives of the company agreed that with its present equipment, their works were capable of turning out this number and that on this output the costs would be reduced. We also expressed the opinion that even on the existing output considerable economies were possible, particularly under the heads 'timber' and 'glue' and we requested the firm, after considering the various possibilities of economy, to draw up three estimates of works costs under the different heads as follows:—

- (1) Estimate of present cost of production on an outturn of 3,00,000 chests per annum.
- (2) Estimate of cost per chest if the output were raised to 5,00,000 chests, economy resulting from increase of output only.
- (3) Estimate of cost per chest on an output of 5,00,000 chests, allowing for all possible economies in addition to that resulting from increase in output.

The estimates are given in the form of a statement below:—

	3,00,000 boxes. Cost per box.	Estimated Cost on 5,00,000 boxes. Cost per box.	Estimated Cost on 5,00,000 boxes. Forward Position.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Timber . . . . .	0 7 82	0 7 48	0 5 91
Glue . . . . .	0 5 16	0 5 16	0 4 16
Packing . . . . .	0 2 34	0 2 34	0 2 34
Power and Fuel . . . . .	0 0 7	0 0 41	0 0 41
Labour and Stores . . . . .	0 2 85	0 1 107	0 1 102
Supervision . . . . .	0 2 27	0 1 8	0 1 8
Repairs and Renewals . . . . .	0 1 79	0 1 24	0 1 24
Miscellaneous . . . . .	0 1 25	0 0 96	0 0 96
	1 7 58	1 4 86	1 2 04
Fittings and Linings . . . . .	1 3 3	1 3 3	1 3 3
Commission and Insurance . . . . .	0 1 9	0 1 1	0 1 1
<b>TOTAL</b>	<b>2 12 58</b>	<b>2 9 06</b>	<b>2 6 44</b>



43. The figures given are the average for all sizes of tea chests. It will be observed that on an annual output of 5,00,000 chests there is a reduction of nearly  $3\frac{1}{2}$  annas per chest on account of increase in production and a further decrease of about  $2\frac{1}{2}$  annas on account of specific measures of economy which will now be introduced.

Decrease in future costs from increased production. As regards the former, the reductions fall under the heads Power and Fuel, Labour and Stores, Supervision, Repairs and Renewals, Miscellaneous, Commission and Insurance. Some increase in supervision will be necessary with increased output and allowance has been made for an additional assistant on Rs. 600 per mensem. The labour force on the works is 313 and we consider that with this number a much enhanced output could be obtained; some increase will, however, be necessary, particularly for packing, despatching and storing the larger quantities of panels. The small reduction of 8 pies under the head Commission and Insurance represents the fall in the incidence of insurance charges, commission on the sale of chests remaining constant at a fixed sum per box. Some decrease in the cost of fittings and linings must be obtainable as a result of the larger orders to be placed and three pies seems a suitable reduction under this head, leaving the charge for fittings and linings at Rs. 1-3-0 per box. The other items need no discussion.

44. Apart from the reduction in costs resulting from increased production, there are also specific economies under two heads, *viz.*, timber and glue. Under the former head the incidence per chest is reduced from 7 annas 4-8 pies to 5 annas 9-1 pies. Full details of this charge are given in Supplementary Statement No. 18.\* This estimate takes into account any possible enhancement of the cost of timber resulting from future difficulty or increase in expense of extraction and no further allowance in this respect is necessary. As we shall explain later, we have thought it desirable to provide for the full royalty chargeable under the lease held by the Assam Saw Mills and Timber Company, Limited. The initial royalty payable was 6 pies per cubic foot, but in July of this year the royalty was due to be increased to 1 anna 6 pies per cubic foot. The original royalty has been extended for another year, but in estimating the costs we have allowed for payment to Government of 1 anna 6 pies per cubic foot. The reduction in timber charges is due to two causes. Up to the present, the forests have been worked by the company itself. It has now been decided to work the forests through contractors and the rates quoted show a very considerable saving. These accrue mainly under the heads elephant upkeep and staff. It is desirable here to explain that the Company's elephants will be lent to the contractors, so that there will be no reduction in capital cost on this account. The other direction in which economy is possible is by improved practice in the works. Up to the present, the margin allowed for trimming the panels has been excessive and it has now been decided to reduce it. A saving of 7 per cent. on timber charges is estimated to result from this measure.

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\* See Evidence Volume.

45. For the same reason, expenditure on glue will diminish since the surface to be covered will be less. Heretofore, the company obtained its glue dry but ready mixed from Messrs. Smith, Stanistreet and Company.

Glue. The glue will in future be prepared entirely at the works from the raw materials. A saving of one anna per chest is anticipated and the incidence will then stand at 4 annas 1-6 pies. We were informed that experiments at the Forest Research Institute indicated that the cost of glue might be taken at 6 annas a chest. Since these experiments were conducted, there has been a fall in the price of casein, in consequence of which the cost of glue per chest would now be some 10 pies less. There is also a certain wastage in experimental work on a small scale which would be saved in operations on a commercial basis and some reduction must be allowed on this account. On the whole, it would appear that the experiments at the Institute indicate between 4 and 5 annas as the incidence per chest of gluing charges. It appears to us, therefore, that the estimate given by the Assam Saw Mills and Timber Company *viz.*, 4 annas 1-6 pies per chest is moderate.

46. Allowing for a reduction of 3 pies per chest in the cost of linings and fittings, the works cost which we consider reasonable on an annual production of 5,00,000 chests is thus Rs. 2-6-1-4. To obtain the price at which the Indian manufacturer may reasonably be expected to sell, overhead charges and manufacturer's profit must be added. In paragraph 41, we have found these to amount to 6 annas 5 pies per chest. The average fair selling price for Indian tea chests of different sizes may, therefore, be fixed at Rs. 2-12-6-4 per chest.

47. Reference has already been made to the fact that tea chests are produced in a variety of sizes. In comparing the fair selling price with the price of imported chests, it will be convenient to take a single size, namely the 19" x 19" x 24" chest. This is the most popular size and fully 50 per cent. of the Indian production conforms to these dimensions. The next size 19" x 19" x 22" of which the costs would be nearly the same represents about 30 per cent. of the sales of the Assam Saw Mills and Timber Company. Clearly the cost of production and therefore the fair selling price of a chest 19" x 19" x 24" will be higher than the average figure for all sizes manufactured in India, since a greater surface of veneer and therefore a greater quantity of glue is required in its construction. No separate costs are available but a calculation on the basis of the relative size of the panels, gives an additional cost of about 3 annas per chest. Since for the purpose of measuring the amount of protection necessary, the 19" x 19" x 24" chest is being taken as typical of all chests manufactured in India, it is necessary to increase the average fair selling price at which we have arrived by this amount. We thus obtain a fair selling price of Rs. 2-15-6-4 for the 19" x 19" x 24" tea chest.

48. Before discussing the question of import prices, it is necessary to explain that tea chests are mainly imported between November and March. Imports subsequent to this period are generally of small lots at accommodation prices, and do not, therefore, afford much assistance in determining the general price level. The information which we have received from the Collectors of Customs cannot, therefore, be accepted as evidence of the prices now current and we must base our conclusions on the statements which we have received from importers. Several different makes of chests are imported into India of which the following are the most important:—

Imperial.	Compolite.
Regent.	Luralda.
Hercules.	Serdang.
Ajax.	Spartan.
Venesta.	

For the purpose of determining the measure of protection required by the Ply Wood industry, we propose to take the price of the Spartan chest with aluminium lining. Our main reason for this choice is that the Spartan chest is, so far as we have been able to ascertain, the lowest priced chest on the market and it is obvious that the Indian chest, before it has consolidated its position, will compete with this type of chest rather than with the superior varieties. Messrs. Davenport and Company, Limited, who are the importers of the Spartan chest, have given us definite information as to their own rates of profit and the rates of discount and commission allowed by them. The current rate given by them for a Spartan 19" x 19" x 24" chest, aluminium lined, is Rs. 3-1-0 f.o.r. Calcutta. Of this about one anna represents landing and other charges. This figure agrees very well with that given by the Indian Tea Association which states that the cost of an imported chest of this size in Calcutta is 4s. 6d. (at exchange of 1/6=Rs. 3). The landed price of Rs. 3-1-0 includes 15 per cent. *ad valorem* duty which amounts to 6-4 annas. Excluding the duty the landed price is Rs. 2-10-6.

49. This figure, however, includes the profit of the importers, which in the case of the Spartan chest is stated to be 15 per cent. on the c.i.f. price. We have received ample evidence that in this line of business, as in many others, extensive discounts are allowed for large orders or for cash. Messrs. Davenport and Company inform us that discount and commission is allowed up to 7½ per cent. on the f.o.r. rates which on present prices would amount to 3-7 annas. Clearly, in measuring the intensity of foreign competition, allowance must be made for this factor. The landed price excluding duty has been found to be Rs. 2-10-6. From this 3-7 annas have to be deducted on account of discount and commission leaving an f.o.r. price of Rs. 2-6-9.

Adjustment on account of importer's profit.

50. The sale of Indian chests is, however, conditioned not by the price of imported chests f.o.r. Calcutta, but by the relative prices at which they can be landed at the tea gardens which constitute the market for the Indian product. The Assam Saw Mills and Timber Company sell their products in the following districts in the proportion noted against each:—

	per cent.
• Darjeeling District . . . . .	4.7
Dibrugarh and Tinsukia . . . . .	33.5
Tezpur . . . . .	14.8
Sylhet . . . . .	27.7
Dooars . . . . .	19.3
	—
	100
	—

The freight on a 19" × 19" × 24" chest to each of these district is as follows:—

	From Calcutta.		From Murkong	
	Cargo rate.		Selek.	
	A.	P.	A.	P.
Darjeeling . . . . .	6	8	7	9
Dibrugarh and Tinsukia . . . . .	2	11.5	2	7.5
Tezpur . . . . .	2	0	3	3
Sylhet . . . . .	3	10	5	5
Dooars . . . . .	2	11	6	6

Taking the average of these rates weighted according to the proportion of output sold by the Assam Saw Mills and Timber Company in each market, we find that the average freight for the Assam Saw Mills and Timber Company is 4 annas 5.75 pies while for the imported chest the figure stands at 3 annas 2.7 pies. The difference 1 anna 3 pies represents the advantage in freight which the imported article enjoys over that of Indian manufacture. We should mention that the other two ply wood companies do not labour under this disadvantage at present. This, however, is mainly because their output is very small and is disposed of to the gardens in the vicinity of their works. With any considerable increase in production, it is probable that their position will not be dissimilar to that of the Assam Saw Mills and Timber Company. It is necessary, therefore, to take account of this difference in freights and it is convenient to adjust it against the import price, which for the purpose of our comparison is thus reduced to Rs. 2-5-65.

51. The following table indicates the course of prices for a chest Import prices for the 19" x 19" x 24" in Northern India in the last four years.

Make of Chest.	LOWEST PRICE.			Lowest current price 1927.
	1924.	1925.	1926.	
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Hercules . . . . .	4 2 0	3 14 0	3 12 0	3 5 0
Ajax . . . . .	4 0 0	3 12 0	3 10 0	3 3 0
Luralda . . . . .	4 10 0	4 9 0	3 14 9	3 7 3
Venesta . . . . .	4 10 0	4 0 0	3 12 0	3 6 0
Compolite . . . . .	4 4 0	3 11 0	3 8 0	3 2 0
Serdang . . . . .	...	4 1 0	3 15 3	3 4 0
Spartan . . . . .	...	...	...	3 1 0

The pre-war price for a Venesta chest of these dimensions was Rs. 2-14-0 f.o.r. Calcutta. If exchange is taken at the current rate of 1s. 6d. = Re. 1, this would be equivalent to Rs. 2-8-9-6 or, excluding duty, which then stood at 2½ per cent., Rs. 2-7-9-6. The current price for an aluminium lined Venesta chest has been stated to be Rs. 3-6-0 f.o.r.; excluding the duty at 15 per cent. this would be reduced to Rs. 2-14-9. Prices are, therefore, about 17 per cent. above pre-war prices and show a considerably smaller variation than is indicated by the general level of wholesale prices.

52. All the leading firms of importers of tea chests in India were invited to send a representative to give evidence before the Board Probable future prices. but Messrs. Williamson, Magor and Company, who are agents for the Venesta Company; Limited, were the only firm who expressed their willingness to do so. Our information as to the future course of prices is, therefore, somewhat scanty. Messrs. Gladstone Wyllie and Company, the agents for the Acme Tea Chest Company, informed us in their written statement that they had received a cable from their principals early in August indicating substantial reductions for the new season supplies. Mr. Colman, on behalf of Messrs. Williamson, Magor and Company, also informed us that if orders were placed direct in England the prices of Venesta chests were not necessarily the same, allowing for freight and duty, as those quoted in India and that concessions might probably be made for large orders. At the same time, it must be remembered that our estimates are being based on the price of the cheapest imported chest with aluminium linings and black metal fittings, and that the price of the Spartan chest, which has been quoted to us, appears to be

for the new season's supplies. We have also made ample allowance for reductions in price out of the commission allowed to the importer. As regards the cost of production in Europe, the increase both in the number and size of ply wood factories in Europe must by this time have been more or less fully reflected in the prices, particularly in Northern India where competition has been exceptionally severe. Finally, the present level of prices of imported tea chests as compared with pre-war prices is distinctly below the comparative price of other commodities. In the circumstances, it appears to us unlikely that any considerable fall in prices will occur hereafter and we consider that no adjustment on this account is necessary. The adjusted price of the imported chest measuring 19" x 19" x 24" may, therefore, be taken at Rs. 2-5-7-8. We have found that the fair selling price of an Indian chest of similar dimensions is Rs. 2-15-6-4. The difference between these figures, *viz.*, 9 annas 10-6 pies per chest, indicates the amount of protection required by the Indian industry.

53. But while on the method of calculation which we have adopted, this figure represents our estimate of the assistance required by the Indian manufacturers of tea chests, we cannot ignore certain practical considerations. Although we have been informed by the Assam Saw Mills and Timber Company that they can work upto an output of 5,00,000 chests a year almost immediately, it does not follow that they will be able to organize the disposal of this output at once. Even with the grant of protection, some time will be required to develop their market, and to this extent production may be restricted. The Assam Railways and Trading Company have, as yet, produced not more than 40,000 chests in any one year, while the Jalpaiguri Timber and Lead Mills Company have barely commenced operations. Neither of these companies will be able at once to secure an economic output, and though they may hope within a reasonable time to dispose of their whole production, the enlargement of their market cannot be effected immediately and must at first be a gradual process. In view of these considerations, we think some margin should be allowed in the amount of protection recommended. We do not propose at this stage to make any addition to the figure at which we have arrived, but in presenting our final recommendations we propose to round off our figures so as to provide a margin against the difficulties which may occur during the first years of the protective period.

## CHAPTER V.

## Method of Protection.

54. Various suggestions have been received from the companies applying for protection, as to the form in which assistance should be extended to the industry. Mainly they

Proposed reduction of import duties. are concerned with the familiar methods of

assistance by means of a bounty on output, and an increase in the import duty coupled with prohibition of the drawback of duty on re-export. In addition to these, it has been suggested that reduction or abolition of the duties on the casein and alkalies used in the manufacture of glue would be a convenient method of assisting the industry. We propose at the outset to deal with this last suggestion. The duty on alkalies is a relatively unimportant element in the cost of manufacture of a chest and its abolition would make no practical difference to the industry. Far the most important and expensive of the ingredients of glue is casein, which is produced in India in quantities sufficient to meet the requirements of tea chest manufacture. Very little casein is imported. Indeed, a considerable export trade exists in this commodity. It may be that the price of casein in India is regulated to some extent by the cost of import from Europe, and that a reduction in import duty would be followed by a fall in the price of the indigenous product. In that event, the dairying industry in India might be adversely affected and we should hesitate to make a recommendation, the exact effect of which, on the evidence before us, cannot be foreseen. In any case, on the costs which we have accepted, the abolition of the duty would make a difference only of about 6 pies in the cost of the average tea chest.

55. There is another aspect of the case to which it is desirable to refer. We have received a communication from the Govern-

ment of India which has a direct bearing on this subject. This has been reproduced as Appendix B. It will be seen that Govern-

Instructions of the Government of India. ment are ordinarily unwilling to impose different duties on the same article according to the purpose for which it is used. We understand that this policy is based on experience of the practical difficulties encountered by the Customs Department in distinguishing the ultimate purpose for which any given article will be used. On this principle, the exemption from duty of casein used in the Ply Wood industry would not be acceptable since it is used in other industries also, as for example leather dressing, cotton sizing and paper glazing. If, therefore, it were proposed to grant relief in respect of the duty on casein, it would be necessary to recommend the total abolition of the duty. This would not involve any considerable loss of revenue to Government and on financial grounds might be unobjectionable. But in view of its possible effect on the dairying industry, and of the fact that the measure

of relief which it would afford is so small, we are unable to support the proposal.

56. As regards the main proposal for protection, three methods have been suggested to us, namely, an increase in the import duty, the grant of a bounty, or protection by means of an import duty supplemented by a bounty. Under the first of these methods, it would be necessary on our findings to impose a specific duty of nearly 10 annas per box or a corresponding *ad valorem* duty. The increase in duty would primarily be borne by the consumer of tea chests in India, namely the Tea industry, and before discussing the advisability of imposing an import duty on tea chests on a scale sufficient to meet the requirements of the Indian industry, it is desirable to consider the position of the Tea industry in this matter. Throughout this enquiry, we have endeavoured to keep in touch with the Indian Tea Association as reflecting the opinion of the tea planting community. At an early stage in our enquiry, we forwarded to the Association copies of our questionnaires as well as the representations received from the Tea Chest industry and also consulted them as to the importers of tea chests who were likely to be interested in the enquiry and whom it would be desirable for the Board to examine. The Association was good enough to furnish us with a memorandum setting out clearly the position of the Tea industry in relation to the enquiry, and also deputed two of its members to give oral evidence supplementary to the written statements. In addition, we have received representations from the Calicut and Cochin Chambers of Commerce on behalf of the industry in South India. In the course of the previous chapters of this report, the case for protection has been set forth at length. It appears, therefore, unnecessary to consider in detail the various arguments which have been put forward against the grant of protection to the manufacturer of tea chests in India. We desire, however, to state that in arriving at our conclusions we have allowed full weight to the facts and arguments set forth by the Association and the other bodies who have addressed us. It is clear from the representations which we have received, that the opposition is not so much to the grant of assistance to the Tea Chest industry, as to the adoption of methods of protection which may adversely affect the Indian tea trade.

Requests of Tea industry.

57. Two requests are put forward—

- (a) That the right to drawback of seven-eighths of the import duty on re-export of tea chests under Chapter VI of the Sea Customs Act should be upheld.
- (b) That the present import duty on tea chests should not be enhanced.

As regards the first of these requests, it is further suggested that, as the system of drawback is cumbrous and the nett receipts of Government are inconsiderable, on the ground of the inconvenience and difficulty of administration involved, the present 15 per



cent. import duty on tea chests might be abolished. The extent to which the drawback system has operated so far in relation to tea chests appears on our information to be limited. We understand that in some cases in Madras the right has been claimed and the Customs authorities have admitted it, but in Calcutta and Chittagong no successful claim for drawback has been made as yet. If the right to drawback is disallowed, we doubt whether the present position of the Indian Tea industry will be substantially changed or its ability to compete successfully with other tea producing countries in the markets of the world affected thereby. Further, an examination of the proceedings of the Legislative Assembly on the Finance Bill, 1923, indicates that the duty on tea chests was raised from the concession rate of  $2\frac{1}{2}$  per cent. to the general *ad valorem* rate of 15 per cent. purely as a revenue measure, and it would appear that the possibility of drawback being admitted under the Sea Customs Act was not at that time contemplated. In the course of the debate, it was brought to notice that tea chests were imported into the country only for the purpose of re-export and a lower duty than 15 per cent. *ad valorem* was urged on this account. The proposal for the imposition of the general *ad valorem* rate was, however, accepted by the Legislature and it appears, therefore, a legitimate conclusion that the Legislature contemplated the whole of the higher rate of duty as a reasonable contribution from the Tea trade to the revenues of the State. If this assumption is correct, it is necessary for us under our terms of reference to take it into account in considering the measures to be adopted for the protection of the Tea Chest industry. Under paragraph (b) of the Resolution of the Legislative Assembly dated 16th February, 1923, laying down the policy of discriminating protection, the Tariff Board is instructed as follows:—

“ That in the application of the above 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, export and excise duties for a large part of its revenue ”.

In view of what we have stated above, we cannot reconcile it with our terms of reference to propose any reduction in the contribution from the Tea trade to the general revenues of Government.

58. The Indian Tea Association has urged that an import duty on tea chests falls on the Indian Tea industry and therefore places Indian tea producers at a disadvantage with other producing countries. It is pointed out that in Java a duty of only  $6\frac{1}{2}$  per cent. is levied on tea chest parts, while in Ceylon they are admitted free and that both these countries are strong competitors with India in the world's tea market. We recognize that an industry like the Indian Tea industry, which depends for its existence mainly on an export market, is naturally apprehensive of the effects of fiscal burdens imposed on it. To the extent that these apprehensions are

Indian Tea Association's representation.

urged as an argument for reducing the present import duty on tea chests, we feel ourselves debarred from considering them. We have assumed in this Chapter that it was the intention of the Legislature to levy a duty of 15 per cent. *ad valorem* on tea chests for revenue purposes and on this assumption, the question of reducing that duty, except for protective reasons connected with this enquiry, is one which lies strictly outside our purview. We desire, however, to state that, in our opinion, the continuance of the existing duty is not likely to produce any material effect on the relative position of India in the tea markets of the world. Although tea chests are imported duty free into Ceylon and on payment of 6¼ per cent. *ad valorem* into Java, an export tax of Rs. 3 per 100 lbs. of tea is in force in the former country, while as against the latter India enjoys Imperial preference equivalent to about two-thirds of a penny per lb.\* We are aware that the Fiscal Commission found that Indian tea had been to some extent displaced by supplies from Java particularly in the Australian market. The figures, however, given in Appendix VII to the Taxation Enquiry Committee's Report (reproduced as Tables I and II, Appendix C of this Volume), show that as compared with the average for three years immediately before the war, while Java had increased her share of the world's tea trade from 8 to 12 per cent., India in the period 1921-22 to 1923-24 had increased her share from 39 to 49 per cent., the progress of Java being at the expense not of India but of China. Although a further comparison between the figures for the calendar years of the periods 1921-23 and 1924-26 (*see* Appendix C, Tables III and IV) shows that Ceylon, China and Java have all improved their positions by a little over 1 per cent., the ground lost by India is inconsiderable.

59. The question of an increase in the import duty above the existing standard stands, however, on a different footing. The burden on the Tea industry, which an increase in the import duty on tea chests may involve, will not in itself be heavy, but on general considerations, we regard such a course as open to objection. The actual burden on the Tea industry may be illustrated as follows. During the past season, the price of an imported chest 19" x 19" x 24" containing about 120 lbs. of tea, may be taken at Rs. 3-7-0 of which 7 annas represents the 15 per cent. *ad valorem* import duty. Let us take as an illustration a tea garden with a capital of Rs. 3½ lakhs, an acreage of 500 acres under tea and an output of 7 maunds per acre. The total annual output would then be about 280,000 lbs. for which in terms of the 19" x 19" x 24" chest, about 2,400 chests would be required. The duty on these would amount to Rs. 1,050. Assuming that a price was obtained of 15 annas a lb., approximately the rate prevailing at present in the Calcutta market, the gross receipts would amount to Rs. 2,62,500 on which the duty would fall at 4 per cent. If the duty were raised by 4 annas a chest, as is claimed by the Assam

\* *See* Taxation Enquiry Committee's report, Volume I, page 129.

Saw Mills and Timber Company, the increase would constitute a charge on the gross receipts of .23 per cent. or a reduction in the nett return of .17 per cent. on the assumed capital. Considered, therefore, from a financial point of view, it would appear that, even if the full measure of protection claimed were granted, no substantial additional burden would be imposed on the Tea industry. At the same time, we recognize that India enjoys no monopoly of the Tea industry, and that in consequence the duty on tea chests is likely to be borne to a large extent by the planting industry. While we consider that there is nothing in the present circumstances of the Tea industry which calls for a reduction in the general rate of import duty borne by other industries, an additional burden, however small, will not, in our opinion, be justified. This is a consideration which is necessarily implied in the policy of discriminating protection and to this extent any increase in the duty above the general 15 per cent. *ad valorem* level is open to objection. In framing our scheme of protection, we propose to give full weight to these considerations.

60. We are now in a position to consider the various methods of protection which have been proposed. The first method proposed is an increase in the import duty on tea chests. The general objection to an enhanced import duty has already been stated, but there are also practical difficulties. An import duty may be levied in the shape of an *ad valorem* duty or a specific duty. In the former case, it is clear that an *ad valorem* duty is less satisfactory than a specific duty, since its protective value diminishes when prices fall and increases when prices rise. On the other hand, a specific duty of 10 annas calculated on the 19" x 19" x 24" chest would be excessive for chests of smaller dimensions while inasmuch as the demand for Indian made chests is mainly for the two sizes, 19" x 19" x 24" and 19" x 19" x 22", a lower specific duty would probably fail to secure an adequate market for the Indian industry. And, although it might be possible to frame a scale of duties on the wood content of each class of chest, this would involve considerable additional work for the Customs Department.

61. If the import duty is to afford effective protection it would of course be necessary to disallow the practice of granting drawback on re-export of tea chests. The only way in which this could be done at present is by declaring that tea chests are not capable of easy identification as required under Section 49 of the Sea Customs Act. It is admittedly impossible to establish the identity of linings and fittings for this purpose, and no claim for drawback on these parts of a tea chest can be sustained. But it is otherwise with regard to panels. That these can be identified to the satisfaction of the Customs authorities is conceded by the allowance of drawback in several cases in Madras, and by the regulations framed by Customs offices prescribing the conditions under which the identity of imported panels may be proved on re-export. It appears, therefore, that if a protective duty were imposed, it would be necessary

to provide by legislation that no drawback should be admissible. Such provision may be made either by means of a specific clause in the bill for the grant of protection, excluding tea chests from the operation of Chapter VI of the Sea Customs Act, or by amending the Sea Customs Act so as to reserve power to Government to disallow drawback in special cases. In the latter case, a wide issue would be raised and even in the former, the fact that a new precedent is created, may make it necessary to view the matter in a wider setting.

62. It is necessary also to consider the administrative difficulties involved in the adoption of this form of assistance. We have already explained that protection is unnecessary for other forms of ply wood. If a higher duty is imposed on tea chests for

Administrative difficulties.

protective purposes, it will be possible to import ply wood panels of larger size at the lower duty, cut them into suitable sizes for tea chest panels and thus avoid the additional duty. An illustration of this kind of evasion is supplied by the Match industry. When the duty on matches was raised in 1921 and 1922 the match splints and box veneers remained subject to the lower duty and a very heavy loss of revenue resulted. Unless, therefore, the same duty is applied to all ply wood products, which for reasons already explained we consider undesirable, protection by means of an enhanced import duty on tea chests may prove ineffective.

63. The grant of protection to the Tea Chest industry by means of a bounty is open to the objection that it imposes an indeterminate liability on the public revenues. On

Bounty.

the present output of the companies, a bounty of 10 annas a chest would involve an expenditure of about Rs. 2½ lakhs from the public revenues. But the output of the existing companies will be increased and new companies may be started, as a result of the grant of protection and it is, therefore, impossible to estimate with certainty the drain on the public revenues during the period of protection. In view, however, of the comparatively small sums involved, this may perhaps not be considered an insuperable objection. But difficulties may arise in regard to the administration of the bounty. In the case of the Steel industry, the products of which are inspected and passed by an official of the Indian Stores Department, it is a comparatively simple matter to satisfy the requirements of audit. In the Tea Chest industry, however, conditions are different. The works of the companies are situated in distant places, remote from the beaten track. No system of inspection of output is possible and this difficulty may be increased if new companies are started in other parts of the country. Moreover, two of the existing companies are closely associated with the tea gardens to which they supply chests. In such circumstances, it appears to us doubtful whether a simple certificate from the manufacturers or even a certificate of purchase would be considered in audit sufficient to support a claim for payment of bounty.

64. But even if administrative difficulties could be overcome, there still appears to us to be no good ground for conferring the whole of the protection required, by means of a bounty. Taking a long view, the Tea industry stands to gain considerably by the successful establishment of the Ply Wood industry in India. We have already referred to the difficulties of supply during the war, when the price of three-ply chests rose to unheard of heights and even the cheapest Japanese shock boxes fetched as much as Rs. 9 each. In course of time, the price of the imported ply box may again rise. We have no grounds for anticipating any immediate increase in the price of imported ply wood. But on a general view of possible developments in the Ply Wood industry in Europe, it seems to us unsafe to assume that the present level of prices will continue indefinitely. Indications of what may happen in the future are contained in a note dated April 1st, 1927, on the Finnish Ply Wood industry from the Consulate General for Finland in London from which we extract the following:—

- “(1) In view of the rapidity with which the Ply Wood industry has developed and if it continues to advance more or less normally in the future, one must look forward to a time when the question of raw material, even if it does not present actual difficulties, will at least demand more attention than has hitherto been given to it.”
- “(2) A notable event which occurred recently in the Finnish ply wood trade was the formation of the Finnish ply wood mills Association whose function will be to watch the commercial and political interests of its members and to conduct their sales both in Finland and abroad ..... The Association began its activities at the beginning of this year (with a membership of five mills). Its organisation is not yet complete and it is probable that other mills will still join, as negotiations are now in progress.”

Against a possible increase in prices, the establishment of ply wood manufacture in India on a scale sufficient to supply the whole home market, affords the Tea industry a certain measure of insurance. There is, in our view, no reason why the general taxpayer should shoulder the whole burden of protecting such an industry and it is but reasonable that the Tea industry also should contribute a share. For these reasons, we are opposed to the grant of protection by a bounty only.

65. There remains the third method of assisting the industry, namely, by means of an import duty at the present level supplemented by a bounty. On the import prices on which we have based our scheme, a 15 per cent. *ad valorem* duty would amount to 6½ annas. It is suggested that the balance should be given in the shape of a bounty. Such a proposal is less

Protection by combination of import duty and bounty.

open to objection than the previous proposals which we have considered and, in particular, would avoid the administrative difficulties involved in imposing a different scale of duties on tea chests and other ply wood products. But the other practical objections to a bounty which we have discussed in paragraph 63 apply equally to this scheme. The difficulties in the way of determining a specific duty applicable to all sizes of chests still remain, while we are not satisfied that arrangements could be made for the payment of a bounty which would satisfy the requirements of the audit department.

66. We have now examined the various schemes of protection submitted to us in the course of our enquiry and our examination

The Board's proposals. has led us to the conclusion that none of the schemes proposed will meet satisfactorily the requirements of the case. After a full consideration of the circumstances, we have decided to recommend a different method of assistance which, in our opinion, will prove to be most suitable. We believe that the scheme which we recommend will not merely avoid the administrative and other difficulties to which we have referred in previous paragraphs but will also provide a direct stimulus to the sale of Indian tea chests. On our calculation the amount of protection required by the industry is 9 annas 10-6 pies per chest. Of this we recommend that  $2\frac{1}{2}$  annas should be given by way of an *ad valorem* import duty on linings and fittings, in other words that the existing import duty of 15 per cent. *ad valorem* on linings and fittings should remain unchanged as a revenue duty. The cost of both the imported chests and those of Indian manufacture will be equally affected by any variation in the price of imported linings and fittings and no claim has been made that the manufacture of these in India requires protection. The import duty on panels and battens for tea chests should be abolished and in its place an export duty of 7 annas 4-6 pies should be imposed on each chest of tea exported the panels of which are not of Indian manufacture. This duty should be graded according to the quantity of tea exported. The standard chest 19" x 19" x 24" contains 120 lbs. of tea and in terms of tea the duty should, therefore, be fixed at 6 annas 1-8 pies per 100 lbs. of tea exported in chests of which the panels are manufactured elsewhere than in India. For the reasons given in Chapter IV, paragraph 53, we suggest that this should be rounded off to  $6\frac{1}{2}$  annas. Of this sum, 3 annas 4 pies per 100 lbs. of tea represents the balance of the existing 15 per cent. duty on tea chests after allowing for the import duty on fittings and linings. The difference, *viz.*, 3 annas 2 pies per 100 lbs. of tea, represents the additional burden on the Tea industry.

67. In an earlier paragraph, we have stated that we fully recognize the objections to any measure which will handicap the Indian

Tea industry in the markets of the world. Refund to Indian Tea Cess Committee. In the special circumstances of the industry, it is, however, possible to avoid any such result. Under the Tea Cess Act, a cess is collected by Government on the export of tea and handed over to the Tea Cess Committee

to be spent for the benefit of the industry. The maximum cess which can at present be imposed is 8 annas per 100 lbs. of tea and the cess at present in force is 6 annas. The question of the rate of cess comes up again for consideration in March, 1928. Our proposal is that out of the proposed duty on ply wood panels for tea chests (6 annas 6 pies per 100 lbs. of tea) so much as represents the excess over the existing import duty should be handed over to the Tea Cess Committee, unless the Tea industry agrees to the small additional burden involved and the export cess on tea reduced accordingly. Clearly, however, this excess which amounts to 3 annas 2 pies per 100 lbs. of tea, will not permit of a corresponding reduction in the tea cess, since the latter is calculated on the total export of tea, while the former will be levied only on tea exported in chests of foreign manufacture. Taking the export of tea at 340 million pounds, in terms of the 19" x 19" x 24" size about 28 lakhs of chests will be required. Allowing for an increase in the production of Indian chests and also including shook chests, the use of which may be expected to decline, about 8 lakhs of these may on the average be of Indian manufacture during the protective period. In order, therefore, to admit of a reduction in the tea cess of 3 annas 2 pies (three annas in round figures) per 100 lbs. of tea a contribution to the Tea Cess Funds of 4½ annas per 100 lbs. of tea exported in chests of foreign make is necessary. We propose, therefore, that 4½ annas per 100 lbs. of tea of the duty collected should be handed over to the Tea Cess Committee.

68. We believe that no administrative difficulties will be experienced in working this system. Fittings and linings are even at present imported separately and the assessment of an *ad valorem* duty will cause no inconvenience. The appearance of the

No administrative difficulties.

wood from which Indian tea chests are manufactured is distinctive and can be easily recognized. An additional safeguard should be provided by requiring a certificate of manufacture from the maker while the trade mark of the firm should be stamped in a conspicuous place on the panels. With these precautions, the Customs Department should find the differentiation of the two classes of chests a comparatively simple matter, while the question of drawback no longer arises. We have also been informed by the Customs Department that since the panels for tea chests are imported in distinctive sizes, no difficulty is anticipated in distinguishing them from other forms of ply wood.

69. It appears desirable now to consider the financial effects of the proposals on the different parties interested in the matter. The

Effect on Government revenues. 375 million pounds, while the export is 340 million pounds. Consumption in India is

about 35 million pounds. For the total tea crop, estimating 120 lbs. of tea on the average to the chest, about 31 lakhs of chests of the size 19" x 19" x 24" would be required. Of these approximately 3 lakhs are now produced in India while we are informed by the Indian Tea Association that about 3 lakhs of shook boxes are

also used. The total number of chests of standard size to be imported is, therefore, at present about 2,500,000. Taking the import prices which we have accepted, a 15 per cent. *ad valorem* duty amounts to  $6\frac{1}{2}$  annas per chest. Since no drawback is permissible on fittings and linings which cannot be identified, Government will in any case retain  $2\frac{1}{2}$  annas per chest of the import duty. But of the balance (4 annas), seven-eighths is liable to drawback. Government, therefore, obtain a revenue of 3 annas per chest which on an import of 2,500,000 chests amounts to about Rs. 4.7 lakhs. Under our proposals, the duty on fittings and linings remains unchanged at  $2\frac{1}{2}$  annas and from this source, therefore, Government receive Rs. 3.9 lakhs; Government also receive 7 annas 9.6 pies per chest as export duty, of which approximately  $2\frac{1}{2}$  annas is retained and the balance made over to the Tea Cess Committee. We have estimated that during the protective period, the re-export of tea chests will be about 2,000,000 annually and the nett revenue received from this source will, therefore, be Rs. 3.1 lakhs. The total revenue received will, therefore, be some Rs. 7 lakhs and on these figures, which assume the use of the standard 19" x 19" x 24" chest throughout, Government's financial position is improved by about Rs.  $2\frac{1}{4}$  lakhs. On the other hand, since the dimensions of a rubber box are identical with those of the standard tea chest and the sole distinction is that the former has no lead lining, it follows that the panels for rubber boxes will be admitted free. About 100,000 of such boxes are sufficient for the present production of rubber in India, and on the supposition that all rubber is exported from India in such chests, a certain revenue will be lost under this head. The amount, however, is very small and allowing for refund on export would amount to not more than about Rs. 3,000 annually.

70. We believe that the scheme of protection which we have put forward provides against any additional burden being imposed on the Tea industry as a result of the increase in duty. In one respect only will the industry be more unfavourably situated than it is at present, namely, that it will be no longer possible to obtain a drawback of duty. We believe that a drawback was never contemplated by the Legislature when the duty was imposed. In any case, the disadvantage is not so great as it might at first appear. Drawback is not obtainable on linings and fittings, and the industry can claim a refund of seven-eighths of the balance (4 annas per chest) which would amount to  $3\frac{1}{2}$  annas. All of this sum, however, is not nett gain. The additional cost in marking the chests in a distinctive manner, as required by the drawback rules, will be reflected in the price. Difficulties will also arise from the fact that the importer of chests, the tea grower and the exporter are not in every instance the same party and it is by no means certain that the whole benefit of the drawback will accrue to the producer. Further, it is not impossible that shipments of tea may be delayed, pending identification of the chests, involving loss of interest on capital and difficulty and expense in subsequent shipping. In view of these considerations, it is extremely doubtful whether, on the



whole, the nett gain to the Tea industry, if the drawback system were allowed, would exceed  $1\frac{1}{2}$  annas per chest.

71. As regards the protection of the Tea Chest industry two aspects of the proposals deserve notice. Since tea chest panels will be imported free of duty, it follows that competition for the home market will be more severe. The demand for tea chests for use in India is, however, but a small fraction of the total demand, and it is unlikely that the industry will be appreciably affected thereby. We explained this aspect of the scheme to the Indian manufacturers and they considered the point of little practical importance. The effect of our proposals on the market for rubber chests is similar. It is impossible to distinguish between the ply wood panels required for rubber chests and those required for tea chests, and the import duty on the former must also be withdrawn. We have considered whether an export duty on rubber chests should be imposed, but since no method appeared feasible by which the consequent burden on the rubber industry could be obviated, we have been forced to abandon the idea. In consequence, the Rubber industry should obtain a small reduction in the cost of chests as a result of our proposals, while the Indian Tea Chest industry will experience more severe competition in this direction. At the same time, as we have already explained, the demand for rubber chests does not exceed one lakh per annum, while competition in this market is not so severe. Judged by present prices, it appears not impossible that even after the removal of the duty the Indian manufacturer will be able to compete.

72. It appears, therefore, that the scheme of protection which we have proposed, adequately protects the Indian industry, secures the financial interests of Government and the taxpayer and imposes on the consumer, namely, the Tea industry, no burden not already contemplated by the Legislature. One objection remains, namely, the theoretical objection to an export tax. The intention and object of our proposals have been fully explained, and we believe that if our recommendations are accepted, the proposed duty can in no circumstances be regarded as a precedent for the re-imposition of the export duty on tea. We are aware that the Fiscal Commission condemned the imposition of export duties for protective purposes. The circumstances which they were considering were, however, entirely different from those which form the subject of this inquiry and the reasons which they advanced for their conclusions are not applicable in this case. Their conclusion was mainly based on the injury which an export duty causes to the home producer, while our proposals specifically provide a means of avoiding such injury. In so far as the increase in the duty is concerned, this returns to the Tea industry and may be regarded as a cess to which the Fiscal Commission in paragraph 184 of their report state that they have no objection. As regards the balance of the duty, this represents the existing 15 per cent. *ad valorem* import

Fiscal Commission's  
objection to protective  
export taxes.

duty and its effects are in no way dissimilar. It appears, therefore, that on theoretical grounds our proposals are not open to objection.

73. In concluding this chapter, we desire to point out that the period during which tea chests are mainly imported commences in November. In order, therefore, to avoid the possibility of double taxation, it is desirable, if our recommendations are accepted, that the import duty on panels for tea chests and rubber boxes should be removed at a very early date.

Early removal of import duty desirable.

## CHAPTER VI.

Supplementary proposals—Period of protection—  
Summary.

74. Inasmuch as the existing ply wood factories owe their inception at least in part to the advice and encouragement of the local Government, it was our intention to recommend that some degree of assistance should be extended to them by waiving for a period the royalty on timber extracted by them.

Enumeration of trees suitable for ply wood manufacture.

On reconsideration, however, we think that the future of the industry will best be secured if the local Government is financially interested, to the extent of the royalty, in the successful working of the companies concerned. Financial considerations must necessarily play a great part in determining the policy to be adopted, particularly in a small province such as Assam, and we should hesitate to suggest any measure involving even a small expenditure, unless it were apparent that a direct return would be secured thereby. In the case of the forests leased by the Jalpaiguri Timber and Lead Mills Company, which are situated in Bengal, complete working plans have already been prepared and planting operations are regularly undertaken. Such is not the case in Assam, and the two companies situated in that province have requested that the local Government should now undertake the enumeration and regeneration of trees suitable for the Ply Wood industry. As regards the province as a whole, the enumeration of any particular species of tree is a matter which involves considerable expense, much time, and heavy additional work for the Forest Department, and we consider that any such measure must await the extension of the working plan system. The enumeration of trees in the areas at present held under lease by the companies is a much less expensive operation, and if an application is made for enumeration of any particular species of tree in a definite portion of that area, we think the local Government might consider it.

75. We have been informed that planting operations both of hollock and simul have been undertaken by the Forest Department in Assam. The question of the future costs of production of ply wood depends largely on the adoption of a sound policy of plantation. Unless timber is obtainable within reasonable distance of the factory and the trees stand in fairly compact blocks, the cost of extraction will increase and manufacture will be thereby rendered more expensive. Planting operations both as regards simul and hollock have been carried out for some years in Assam and we have no doubt that the existence of the ply wood factories was taken into account as one of the factors to be considered. It would seem from the evidence of the Conservator of Forests, Assam, that Government considers that satisfactory financial results will be obtained from planting operations and it will, therefore, be of mutual advantage to Government

and the ply wood manufacturers, if a definite scheme of plantation is drawn up. We recommend that the companies should be consulted both as to their probable future annual requirements and as to the location of the plantations.

76. Reference has already been made to the importance of extending the operations of the ply wood factories to the manufacture of other forms of ply wood besides tea chests and, in particular, of panels for railway carriages and houses. Although the market is at present restricted, there is considerable scope for the extension of the use of ply wood for ornamental and other general purposes and this is one of the subjects for research at the Forest Research Institute at Dehra Dun. Little practical result will, however, follow from such research work unless information is available as to the supplies of timber suitable for such ornamental veneers and the possibility of its extraction. It is of some importance, therefore, that the provincial Forest Department should keep in close touch with the results obtained at the Forest Research Institute and should, as far as possible, take steps to ascertain the available supplies of timber found suitable for the preparation of ply wood at the Forest Research Institute, particularly in those forests situated in the vicinity of the existing factories.

77. Ply wood manufacture on a commercial scale being an industry of comparatively recent growth, there is still much scope for scientific investigation both into the processes followed and the suitability of the raw material used. In India in particular, where climatic conditions are so different from those existing in Europe and America, considerable research is necessary before methods of manufacture which have been proved suitable elsewhere, can be accepted as giving the best results in this country. Investigation is required into such matters as the best temperature and period for soaking logs, the proper moisture content of veneers at the time of gluing, the best combinations of different species of timber and the suitability of various kinds of timber for the manufacture of ornamental ply wood, to mention but a few of the pressing problems which are now engaging the attention of the authorities at the Forest Research Institute. We wish, therefore, to emphasize the great importance to the future of the industry of careful and reliable investigation being undertaken at the Institute at Dehra Dun. We may also point out that the development of the ply wood industry will assist in securing an outlet for the less valuable kinds of trees in Indian forests. In order to secure results which will form the basis of commercial enterprise, it is necessary that the staff should possess sufficient practical experience of the manufacture of ply wood both in India and in other countries to command the confidence of business men. We would also draw attention to the importance of providing plant which can be relied on to give accurate results. At our visit to the Institute, we found that owing to insufficient electric power supplied by the Mussoorie

Electric Company it was impossible to regulate the speed at which the lathe for peeling veneers was worked or indeed to work the lathe at all, and we were informed that such a failure was not unusual. Clearly, with a varying electric current, it is impossible to carry out experimental work on the lathe with any hope of obtaining any useful result. We understand that this defect will shortly be remedied and we call attention to the point merely to illustrate the importance of installing reliable plant if the best results are to be obtained.

78. Both three-ply and five-ply chests have been used by the Opium Department since 1923-24. In 1923-24, contracts were placed with the Surma Valley Saw Mills, but since that year all purchases have been made from Venesta, Limited. Orders are at present placed through the Indian Stores Department and in 1926-27 Messrs. Bird and Company tendered on behalf of the Assam Saw Mills and Timber Company for 2,500 five-ply wood chests and 4,000 three-ply wood chests. For the three-ply wood chests the Venesta Company's tender was the lowest, but for the five-ply wood chests the tender of both companies were the same. After an inspection of the samples, the Indian Stores Department recommended that half the order for five-ply chests should be placed with the Assam Saw Mills and Timber Company. The Opium Department, however, placed the whole order with Venesta, Limited. The grounds on which this action was taken are two, namely:—(1) that samples having been sent to the Forest Research Institute, the report on the Assam Saw Mills and Timber Company's ply wood was not altogether favourable, (2) that the Assam Saw Mills and Timber Company's chest did not conform to specification. As regards the first of these grounds, the officials at the Dehra Dun Institute have stated definitely that their tests are as to the relative strengths of different ply wood and no inference can be drawn from them as to whether any particular brand of ply wood is suitable for the purpose for which it is intended. Tea chests are liable to exceptionally rough handling and we have been informed of no specific instances in which the Assam Saw Mills and Timber Company's chests have failed to stand up to the strains imposed on them. In view of this and of the definite recommendation of the Chief Controller of Stores, who in matters of this sort is in touch with trade opinion, we do not consider that the report of the Forest Research Institute was in itself sufficient ground for rejecting the only Indian tender.

79. As regards the question of specification, we have received complaints that the specifications for the five-ply chest are such that the Indian manufacturer cannot comply with them and that they are susceptible of considerable simplification without in any way affecting the strength of the finished article. It has been pointed out that the length of nails specified, *viz.*,  $1\frac{5}{8}$ " is not a standard length in India and in fact the Assam Railways and Trading Company have found it impossible to obtain these

from England. Further, the fittings are required to be in one piece and the Indian companies have found it difficult to secure fittings of the required length. It is suggested that the strength of the box would not suffer if the fittings were supplied in two pieces. Some simplification of the battens also appears possible and a batten  $1'' \times 1\frac{1}{4}''$  has been proposed. We recommend that in future the Opium Department should draw up the specifications for its requirements of ply wood boxes in consultation with the Chief Controller of Stores and the Indian ply wood makers, so as to give effect, as far as possible, to Government's declared intention of encouraging Indian industries.

80. A feature of the tea chest trade is the close connection between the agents for the various brands of imported chests and the management of the tea gardens. All the leading importers in India are also managing agents for a large number of gardens and it is obvious that in these circumstances the inducement to continue the use of imported chests is considerable. With any substantial extension of this market for panelling and other forms of ply wood manufacture, the prospects of the Ply Wood industry considered as a whole would be substantially improved. Even though the companies devote greater attention to this aspect of their business, no very rapid development of this market can be expected, particularly in view of the fact that considerable investigation is still required into the suitability of timber for the manufacture of ornamental ply wood. We consider that in five years it should be possible for the industry to consolidate its position and establish a market for its products and we accordingly recommend that protection be granted for a period of five years.

Summary. 81. We summarize our findings and proposals as follows:—

- (1) All the raw materials for the manufacture of ply wood and of tea chests are available in sufficient quantities in India.
- (2) The other conditions laid down by the Fiscal Commission are also satisfied. It does not, however, appear that the manufacture of ply wood products other than tea chests requires any assistance at present.
- (3) Such products, however, constitute a very small portion of the outturn of the existing factories which are mainly engaged in the manufacture of tea chests. Very severe competition has been experienced in recent years in Northern India from imported tea chests, and without some form of assistance the ply wood factories will be forced to suspend manufacture.
- (4) We are satisfied that if adequate support is now granted, the industry will be able to stand without protection within a reasonable period.

- (5) We find that the fair selling price of a tea chest 19" × 19" × 24" in India on a production of 5,00,000 chests annually may be estimated at Rs. 2-15-6-4.
- (6) We find the price of imported chests of the same dimensions (without duty) f.o.r. Calcutta is Rs. 2-6-10-8.
- (7) Allowing for the freight advantage of imported chests to the tea gardens, we find the adjusted import price comparable to the fair selling price of Indian chests is Rs. 2-5-7-8. :
- (8) The difference between the fair selling price and the adjusted import price, viz., 9 annas 10-6 pies, represents the measure of protection which we consider necessary subject to slight further adjustment.
- (9) We recommend that the present import duty on all ply wood articles other than tea chests and rubber boxes should remain unchanged at 15 per cent. *ad valorem*.
- (10) The duty on fittings of tea chests and rubber boxes and the linings of tea chests should remain unchanged at 15 per cent. *ad valorem*.
- (11) The import duty on the ply wood panels and battens of tea chests and rubber boxes should be abolished.
- (12) A specific export duty should be imposed on tea chests other than those of which the ply wood panels are of Indian manufacture.
- (13) The export duty should be at the rate of 6 annas 6 pies per 100 lbs. of tea exported in chests of which the ply wood panels are not of Indian manufacture.
- (14) Of this sum 4½ annas per 100 lbs. of tea might be made over to the Indian Tea Cess Committee and the cess leviable under the Indian Tea Cess Act be reduced by 3 annas per 100 lbs. of tea.
- (15) The views of the ply wood companies should be considered by local Governments in connection with the enumeration or planting of trees suitable for the Ply Wood industry.
- (16) Steps should be taken to extend and improve the facilities for research at the Forest Research Institute, Dehra Dun, in connection with the manufacture of ply wood. Local Governments should co-operate with the Institute in its investigations, especially as regards the suitability for the manufacture of ornamental ply wood of trees available in sufficient quantities.
- (17) The specifications for opium chests should be drawn up by the Opium Department in consultation with the Indian Stores Department and the Indian ply wood manufacturers in such a way as to ensure that, so far as possible, effect is given to Government's policy of encouraging Indian industries.

- (18) The period of protection should be fixed at five years.
- (19) Since the season for the import of tea chests commences in November, early action should be taken to abolish the import duty on tea chest panels, so as to avoid the possibility of double taxation.

We append a draft of the entries required in the Tariff Schedule to give effect to our proposals (page 52).

A. E. MATHIAS—President.

J. MATTHAI—Member.

C. B. B. CLEE—Secretary,  
20th September, 1927.



*Draft of changes or additions to Schedules II and III of the Indian Tariff Act, 1894 (VIII of 1894) necessitated by the Board's proposals.*

**SCHEDULE II.—IMPORT TARIFF.**

**PART I.**

*Articles which are free of duty.*

No.	Names of Articles.
	III—Articles wholly or mainly manufactured— WOOD.
22 A	Panels, battens, and corner pieces, of ply wood chests for packing tea or rubber.

**SCHEDULE III.—EXPORT TARIFF.**

**PART II.**

*Articles which are liable to protective duty at special rates.*

No.	Names of Articles.	Per 100 lbs. of tea contained.	
		A.	P.
5	Ply wood tea chests of which the panels are not of Indian manufacture.	6	6

The changes required in the Tariff Schedule are as follows:—

1. An entry under Section II, Part I excluding from the import duty the wooden portions of ply wood chests for packing tea or rubber.
2. It will be necessary to divide Schedule III—Export Tariff into two parts. Part I will comprise the articles on which export duty is now levied for revenue purpose. Part II will contain the special protective export duty which we now propose.

The following additional points require explanation—

- (a) Metal fittings and linings which we contemplate shall still bear an import duty of 15 per cent. *ad valorem*, will fall under Articles 97 and 98, while grease proof paper will be covered by Article 99 of Part V of Schedule II.

- (b) Wooden tea chests other than of ply wood will continue to be liable to a 15 per cent. import duty under Part V, Article 93 of the Schedule.
- (c) Ply wood other than for the panels of tea or rubber chests will continue to be liable to a 15 per cent. import duty under Part V, Article 93 of the Schedule.
- (d) Since the chests used for packing rubber are of the same dimensions as those used for packing tea, it is impossible for the Customs Department to distinguish between them, and the panels, battens and corner pieces of ply wood chests for packing rubber must also be excluded from the import duty.
- (e) For the reasons stated in paragraph 71 no export duty is recommended on rubber chests.

## APPENDIX A.

**Comparison of the Board's estimate of Capital Expenditure and running charges with that prepared by Mr. J. Kenneth Pearce, Chief Forest Engineer, Madras.**

We have estimated the capital expenditure required for a factory producing 5 lakhs of tea chests a year at Rs. 10 lakhs and the fair selling price of 19" x 19" x 24" chest at Rs. 2-15-64. Our attention has been called to an estimate of the capital cost and running charges for a ply wood factory producing 2,40,000 tea chests annually which appears on page 54 *et seq* of the report on Progress and proposed future Expansion in the utilization of the Forest Resources of Madras, by Mr. J. Kenneth Pearce. The capital cost there given is Rs. 2,50,000 and it would appear, therefore, allowing for the difference in output, that our estimate is at least 100 per cent. too high and that the capital cost for a factory producing 5 lakhs of boxes a year should not exceed Rs. 5 lakhs. It seems necessary, therefore, by a critical examination either to reconcile the discrepancies between the two estimates or to indicate our reasons for believing that manufacture on a commercial scale could not be undertaken at a lower capital cost. The first and most obvious difference relates to the extraction of timber. Whereas Mr. Pearce's estimate is framed on the understanding that the Forest Department will deliver timber at the factory at a fixed price (*viz.*, 10 annas per cubic foot), which includes the return of any capital expenditure incurred in extraction, a commercial firm must provide in its capital account for expenditure on tram lines, boats and elephants for extracting timber and conveying it to the works. If allowance is made for such items, the capital cost is reduced by Rs. 1.7 lakhs.

2. Mr. Pearce's estimate also contains no charge for the construction of quarters for the staff. It may be perfectly true that where an economic rent is paid, it is unnecessary to include the cost of such buildings in the capital account. This, however, implies that the rate of wages must be higher than that offered by firms who provide free quarters for their staff, which is the general practice in the factories which we have seen. An economic rent on that portion of cost of the quarters specified in paragraph 236 allocated to the ply wood factory would amount to about 20 per cent. of the salary of the staff (paragraph 221). Apart from the fact that under the Fundamental Rules, recovery of rent from Government employees is limited to 10 per cent. of their pay, it is certain that if rent were charged, the average manufacturer in India would find it necessary to pay a much higher scale of pay than that specified in paragraph 221 of the report. The charge would, therefore, merely be transferred from capital to working expenses. Items which would probably not be necessary for a Government factory such as a dispensary, compounders' quarters, etc., must also not be overlooked. Expenditure on quarters and dispensary accounts for about Rs. 1½ lakhs, and if these were omitted our estimate would be reduced by this amount.

3. So far we have accounted for an excess of Rs. 3 lakhs in our estimate, that is to say, if the two estimates were framed on exactly similar lines, our estimate would be reduced from Rs. 10 lakhs to

Other items. Rs. 7 lakhs. Before dealing with other points in the estimate, we should explain that it is not our intention to imply that the estimate is in any way unsuited for the purpose for which it was framed. There may be local conditions which have been taken into account but of which we are ignorant. Our purpose is rather to show that this estimate, however suited to local conditions, cannot be considered to represent even approximately the capital expenditure required for the erection and equipment of a works under commercial management. The following are the principal omissions. No expenditure has been included on account of the cost of

clearing the site. Provision for buildings other than quarters (Rs. 50,000) appears very low. During the periods when demand for tea chests slackens, the stock of panels accumulates and it is important that proper storage should be provided. Very few spare parts have been provided. Only three spare knives have been provided for the lathe and an equal number for each clipper. Usually at least 12 spare knives are provided for each machine. If sufficient spare parts are not available, the work of the factory may be seriously affected with a consequent increase in costs. No provision has been made for an electric crane or for trollies or trolley lines in and near the factory. If the timber and ply wood is moved by hand, a very considerable increase in labour charges will be necessary. Transport and erection charges (Rs. 13,000) are very low; erection charges alone are usually estimated at about 20 per cent. of the cost of plant. No expenditure has been included on account of the cost of vats for boiling logs nor has allowance been made for workshop equipment. Provision has been made for one clipper only, whereas two clippers are necessary for each lathe, one to cut the veneer after leaving the lathe, and the other to trim it after drying and before gluing. When manufacture is undertaken on a commercial scale, it is necessary to utilize timber of all girths. In addition to the ordinary lathe, a large lathe is therefore installed to deal with logs of exceptional diameter. This estimate contains provision for one lathe only. These are some of the directions in which we consider the estimate fails to furnish a correct indication of the capital cost of establishing a ply wood factory as a commercial undertaking.

4. Turning now to the cost of manufacture and the fair selling price, in paragraph 223 of Mr. Pearce's report the conclusion was reached that the cost of production of a tea chest 19" x 19" x 24", including interest on capital at 6 per cent., at the fair selling price. Fair selling price. cost of production of a tea chest 19" x 19" x 24", including interest on capital at 6 per cent., at the ply wood factory, which it is proposed to erect in Madras, would be Rs. 2-8-0 or some 7-5 annas less than the figure at which we have arrived. If our conclusions as to the cost of plant, buildings and erection are accepted, it would be necessary to estimate profit and depreciation on nearly 5 lakhs instead of 2½ lakhs capital cost. Taking reasonable commercial rates for depreciation, profit and working capital, namely 6½ per cent., 8 per cent. and 7 per cent., and allowing as working capital a sum which the experience of commercial firms shows to be necessary, namely about Rs. 2½ lakhs, this estimate would require to be raised by about 2½ annas on account of overhead charges and manufacturer's profit alone. Further, nothing has been included in the estimate on account of packing charges which we have found to amount to 2 annas 3-4 pies per chest and commission and insurance 1 anna 1 pie. Vegetable glue is proposed to be used, though experience up to the present indicates that it is unsuitable for tea chest manufacture. The estimate for this is 3½ annas while casein glue costs between 4 and 5 annas per chest. No allowance appears to have been made for miscellaneous charges, leave allowances and the like. These amount to nearly 1 anna per chest. Apart from any increase in labour charges or under the head repairs and renewals, which we consider not improbable, it appears that even allowing for a reduction in timber charges consequent on the inclusion in the block account of the capital cost of plant, etc., required for extraction of timber, an addition of about 7 annas must be made to the estimate. In our opinion, therefore, there is nothing in the report to cause us to vary the estimates at which we have already arrived.

## APPENDIX B.

**Copy of letter No. 483-T., dated the 7th June 1927, from the Secretary to the Government of India, Department of Commerce, to the Secretary, Tariff Board, Calcutta.**

**Subject:—Reference to the Tariff Board for enquiry of the question of protection for the Indian ply wood and tea chest industry.**

With reference to this Department Resolution No. 483-T., dated the 26th May 1927, on the subject noted above, I am directed to invite the attention of the Board to certain remarks reproduced below made by Mr. (afterwards Sir James) Westland in the Imperial Legislative Council on the 27th December 1894, when presenting the report of the Select Committee on the Bill to amend the Indian Tariff Act, 1894. Sir James in the course of his speech enunciated the following general principle which should be followed in the framing of a tariff:—

“It is not possible to work a tariff upon the principle that the same article may be taxed, or may be exempt, according to the purpose which the particular importer has in view. Wire gauze, for example, is used for a hundred different purposes. We cannot allow a paper manufacturer to claim an exemption for his importation on the ground that he requires it for the working of his paper machines, and tell all other importers that because they are not paper manufacturers they must pay duty.”

2. I am to add that the Government of India are still guided by this principle and are ordinarily unwilling to word items in the tariff schedules in such a way that the amount of the duty depends upon the purpose for which an article is imported. I am accordingly to suggest that should the Board consider it necessary, as a result of their enquiry, to recommend any alterations in the Tariff Schedules, this principle may be borne in mind.

## APPENDIX C.

**Table showing India's share in the world trade in Tea for the three years ending 1913-14 and 1923-24.**

*Three financial years ending 1913-14.*

(Millions of lbs.)

TABLE I.

	India.	Ceylon.	China.	Java.	TOTAL.
1911-12 . . . . .	263	185	195	50	693
Percentage of total . . . . .	38	27	28	7	...
1912-13 . . . . .	252	187	198	62	729
Percentage of total . . . . .	39	26	27	8	...
1913-14 . . . . .	292	197	191	65	745
Percentage of total . . . . .	39	26	26	9	...
Average . . . . .	279	190	195	59	722
Percentage of total . . . . .	39	26	27	8	...

*Three financial years ending 1923-24.*

(Millions of lbs.)

TABLE II.

	India.	Ceylon.	China.	Java.	TOTAL.
1921-22 . . . . .	317	161	57	67	602
Percentage of total . . . . .	53	27	9	11	...
1922-23 . . . . .	295	172	76	81	624
Percentage of total . . . . .	47	28	12	13	...
1923-24 . . . . .	345	182	107	90	724
Percentage of total . . . . .	48	25	15	12	...
Average . . . . .	319	172	80	79	650
Percentage of total . . . . .	49	27	12	12	...

Tables I and II are re-printed from Appendix VII, Taxation Enquiry Committee's Report, Volume II.

*Three calendar years 1921, 1922 and 1923.*

(Millions of lbs.)

TABLE III.

	India.	Ceylon.	China.	Java.	Total.
1921 . . . . .	350	162	57	69	638
Percentage of total . . . . .	54.8	25.4	9	10.8	...
1922 . . . . .	307	172	77	77	633
Percentage of total . . . . .	48.5	27.3	12.1	12.1	...
1923 . . . . .	327	168	107	90	712
Percentage of total . . . . .	45.9	26.4	15.0	12.7	...
Average . . . . .	328	174	80.3	78.7	661
Percentage of total . . . . .	49.6	26.3	12.1	12	...

*Three calendar years 1924, 1925 and 1926.*

(Millions of lbs.)

TABLE IV.

	India	Ceylon.	China.	Java.	Total.
1924 . . . . .	347	211	104	105	765
Percentage of total . . . . .	45.4	27.6	13.3	13.7	...
1925 . . . . .	339	215	111	95	760
Percentage of total . . . . .	44.6	28.3	14.6	12.5	...
1926 . . . . .	342	225	112	119	799
Percentage of total . . . . .	42.8	28.3	14.0	14.9	...
Average . . . . .	343	217	108	106	774
Percentage of total . . . . .	44.3	28	13.9	13.8	...

**APPENDIX D.**  
**Value of tea chests imported into India.**

TABLE I.  
*Wooden Chests.*

Year.	COUNTRIES OF ORIGIN.														Total.
	United Kingdom.	Ceylon.	Other British Possession.	North Russia.	South Russia.	Finland.	Esthonia.	Sweden.	Norway.	Germany.	Belgium.	Italy.	Japan.	Other Foreign countries.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1921-22 . . .	51,62,866	10,147	...	4,30,065	...	...	...	8,546	...	7,769	...	...	1,10,018	...	57,29,481
1922-23 . . .	58,59,174	20,492	971	93,415	...	...	85,963	6,667	2,256	1,09,817	6,685	6,021	10,167	403	62,02,031
1923-24 . . .	47,61,221	17,632	...	4,14,835	...	4,80,215	5,08,525	13,322	...	76,285	...	...	29,548	...	62,96,563
1924-25 . . .	73,46,788	436	355	40,176	16,042	10,97,911	1,41,580	16,512	12,181	3,70,427	115	...	44,665	...	90,87,178
1925-26 . . .	67,04,041	35,867	...	11,617	...	14,27,714	4,003	2,133	13,457	2,08,553	10,974	...	26,866	...	84,41,745
1926-27 . . .	48,67,528	16,069	1,070	...	...	9,20,836	2,46,495	733	5,836	1,49,171	4,796	12,303	29,719	9,304	62,63,952

TABLE II.  
*Share of each Province.*

Year.	Bengal.	Bombay.	Madras.
	Rs.	Rs.	Rs.
1921-22 . . .	50,70,050	...	6,59,381
1922-23 . . .	53,48,218	...	8,53,813
1923-24 . . .	53,12,361	...	9,84,222
1924-25 . . .	79,58,408	...	11,28,770
1925-26 . . .	72,72,731	2,085	11,69,879
1926-27 . . .	51,85,545	4,184	10,74,223



**APPENDIX E.****List of factories and forests visited by the Board.**

No.	Factories or forests.	Date of visit.
1	Veneer factory of the Assam Railways and Trading Company, Limited, at Margherita, Assam.	15th July 1927.
2	Extraction operations in the forest worked by the Assam Railways and Trading Company, Limited.	16th July 1927.
3	Extraction operations in the forest in the Pasighat area, Assam, worked by the Assam Saw Mills and Timber Company, Limited.	18th July 1927.
4	Veneer factory of the Assam Saw Mills and Timber Company, Limited, at Murkong Selek, Assam.	14th July 1927.
5	Meckla Saw Mills of the Assam Saw Mills and Timber Company, Limited.	20th July 1927.
6	Experimental ply wood plant at the Forest Research Institute, Dehra Dun.	25th August 1927.
	The Triangle Lead Mills, Kidderpore . . . .	8th September 1927.