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Report of the Indian Tariff Board on  
the Removal of the Revenue Duty  
on Pig Iron including the Evidence  
recorded during the enquiry.



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***Report.***

## Report on the Removal of the Revenue Duty on Pig Iron.

In their Resolution Commerce Department No. 38-T (2), dated 28th March, 1925, the Government of India directed the Tariff Board to consider all cases which might be brought to its notice in which the development of Indian industries was hampered by tariff inequality. The Resolution runs as follows:—

“ The Government of India have received a number of representations to the effect that the development of certain industries in India is hampered by the fact that the duty on the finished article is lower than the duty on the materials which have to be imported for the manufacture of that article. A list of such representations is appended to this Resolution. The representations will now be referred to the Tariff Board. It is requested to examine these representations and any others of a similar nature which may be brought to its notice and to make such recommendations, whether general or special, as it thinks fit.

2. Firms or persons interested in the above enquiry should address their representations direct to the Secretary of the Tariff Board.”

2. In connection with this Resolution the question of the retention or removal of the duty on pig iron arose in the following manner. The duty on machinery was removed in September 1927, and in a representation to the Board the Britannia Engineering Company, Calcutta, pointed out that this would adversely affect their position as manufacturers of jute and tea machinery, since their raw materials namely steel and pig iron, were liable, the one to a protective and the other to a revenue duty, while foreign machinery would be admitted free. It was considered that the removal of the duty on pig iron might to some extent remove the inequality of treatment, if any case for relief was established. Accordingly in July 1928 the Board addressed manufacturers of pig iron, requesting their views on the subject of the removal of the duty. Meanwhile the Britannia Engineering Company requested that their application should be kept pending for 12 months after which they would be in a better position to gauge the exact effect of the removal of the duty on machinery. At the end of this time, the Company withdrew their application.



3. While the application of the Britannia Engineering Company remained pending, representations were also received from the following firms and institutions asking for the removal of the duty:—

1. Messrs. Kirloskar Bros., Kirloskarwadi.
2. The Sikdar Iron Works, Calcutta.
3. The Bihar and Orissa Chamber of Commerce.
4. The Bengal National Chamber of Commerce.

Many of the grounds on which the removal of the duty on pig iron was urged in these representations do not fall strictly within our terms. For example it was urged that the existence of a combine of manufacturers of pig iron with the avowed object of maintaining prices was contrary to the public interest; that the revenue duty afforded indirect protection to the industry for which no case could be established; that by maintaining prices at a high level the manufacturers were themselves able to engage in the foundry business without fear of competition from other firms, who had to purchase their supply of pig iron in the open market. With these and other reasons advanced for the removal of the duty we are not directly concerned in an enquiry confined to the question of tariff inequality though we shall have occasion to refer to some of them at a later stage of the report.

4. It is alleged in all the representations regarding the removal of the duty that the three largest producers of pig iron in India, namely the Tata Iron and Steel Company, the Indian Iron and Steel Company and the Bengal Iron Company have entered into business arrangements, whereby the price of pig iron is maintained at the import level and in the absence of competitive conditions the internal price of pig iron is enhanced by the 10 per cent. import duty. Manufacturers of machinery in which cast iron plays a part are therefore at a disadvantage in competing with similar imported machinery. It is therefore claimed that the duty on pig iron should be removed. It is this presentation of the case which we have in the main to investigate.

5. It is admitted that the firms mentioned have entered into business arrangements with a view to stabilizing prices and that competition between members of the combine has been eliminated. But the problem before us must be considered from two points of view. We have first to ascertain whether prices have been kept at an unduly high level and whether the removal of the duty would therefore result in a fall in internal prices, and, if so, the extent to which manufacturers of machinery will benefit. It must then be determined whether the gain to the manufacturers of machinery is commensurate with the loss which will thereby be inflicted on manufacturers of pig iron. Before attempting an examination of

these aspects of the case it is necessary to investigate the present level of market prices of pig iron in India.

6. The statement that the pig iron combine have maintained internal prices at the level of the price of imported pig iron including revenue duty, does not appear to be correct. The Indian Metallurgical Association supplied us with the following figures for imported pig comparable in quality with Indian pig—

	£. s. d.	Rs. A. P.
Cost f. o. b. . . . .	3 15 0	
Freight and insurance . . . . .	1 1 0	
	4 16 0	or 64 0 0
Port charges . . . . .	...	3 0 0
C. i. f. landed price . . . . .	...	67 0 0
Import duty of 10 per cent. on a tariff valuation of Rs. 75 . . . . .	...	7 8 0
		74 8 0
	or say	75 0 0

The price for No. 3 pig iron supplied by the Tata Iron and Steel Company or the Indian Iron and Steel Company was at about that time Rs. 65 per ton f.o.r. Calcutta. More recently at our request the Agent of the East Indian Railway called for tenders both in England and in India for pig iron of comparable quality. The quotations for an order of 12,000 tons were as follows—

Director General of Stores, London.	Tata Iron and Steel Company.	Indian Iron and Steel Company.	Bengal Iron Company.	Mysore Iron Works.
Rs. A. P.	Rs.	Rs.	Rs.	Rs.
77 14 8	64	64	69	45
f. o. r.	f. o. r.	f. o. r.	f. o. r.	f. o. r.
Calcutta.	Ta'anagar.	Borachak.	Ku'ti.	Bhadravati.

Adding the railway freights to Jamalpur to these figures we obtain the following prices f.o.r. Jamalpur—

Director General of Stores, London.	Tata Iron and Steel Company.	Indian Iron and Steel Company.	Bengal Iron Company.	Mysore Iron Works.
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs.
81 9 8	68 13 0	65 15 9	70 15 9	65

It will be seen that both at the port of Calcutta and upcountry there is a difference of between Rs. 10 and Rs. 16 between the price of Indian pig iron and that of the imported article. It may be thought that this difference in price represents a difference in quality. The quality of Indian pig iron however is not inferior to that of the imported article. Prices upcountry are determined in general by the price charged at nearest port *plus* the railway freight from such port. For small consumers in the absence of special arrangements prices are charged f.o.r. works the level being determined by the price at nearest port *plus* railway freight to works. Since the purchaser has to pay railway freight to destination, the price is enhanced very considerably. On the other hand for large consumers such as the railways the figures given above show that the price *ex-works* amounts to approximately the same price as at port and the only addition to be made is railway freight from works to destination.

7. It appears therefore that the prices charged by the combine are well below the import price including duty. Such has not always been the case; for we find that the combine's policy. East Indian Railway during 1927-28 and up to April 1928 was paying Rs. 69 per ton for No. 3-F. Indian pig iron while in May 1928 they were able to obtain the same article at Rs. 62 per ton. By this reduction the manufacturers of pig iron have substantially met the complaints advanced regarding the level of their prices. It is possible that their action is not unconnected with the publicity which has been accorded in the Press to their price arrangements. But it is indisputable also that the existence of another Iron Works, namely the Mysore Iron Works, which is not a member of the combine, has been an important factor in certain markets in India in maintaining prices at a level considerably below that of imported pig iron. In addition to the reduction in price which has been made in the past year, it is customary for the combine to shade their prices further if it can be shown that such price reduction will increase the use of pig iron in India.

8. It is now necessary to consider what would be the effect on prices of the abolition of the 10 per cent. revenue duty. Large consumers such as the railways would obtain no advantage thereby. Already they purchase their supplies of pig iron at a price equivalent to and sometimes less than the import price without duty, so that even were the duty removed, it would be impossible to import at lower cost and in these circumstances it would not be equitable for the railways to insist upon any further reduction. As regards the smaller consumers, it is probable that the removal of the duty would not in any way force the hands of the combine. The inconvenience and delay in obtaining supplies from abroad renders it improbable that any but the largest consumers would import save when the difference between the cost of import and the local price was very high. Further, it is improbable that any middleman would undertake the risk of import, since any sudden variation introduced by the combine in the price of pig iron might well

involve him in serious loss. Although present prices to small consumers upcountry are below the price at which pig iron can be imported the difference does not in all cases represent the full amount of the duty and theoretically the removal of the duty should result in some reduction in price. But for the reasons which we have already given it is not improbable that the combine if it so desired could maintain the present prices even after the removal of the duty. We have however been informed by Mr. Sawday on behalf of the Indian Metallurgical Association that, if the duty were removed, although other prices would be maintained, bazaar prices would be reduced by between Rs. 4 and Rs. 5 per ton.

9. Such a reduction would affect the manufacturers of machinery and implements to a very small extent. The consumers of pig iron

Effect on manufacturers of machinery. who have raised objections to the retention of the revenue duty have not submitted to us any detailed statements from which we can

see to what extent they would benefit if the revenue duty was abolished. From such other evidence as we have been able to obtain, we are satisfied that the benefit that the consumer would derive would be negligible. Indian pig iron is principally used for the manufacture of certain classes of machinery such as jute mill machinery, pipes and for small castings. The average quantity of pig iron used in castings seldom exceeds one or two hundredweights while the proportion which the cost of pig iron bears to the total cost of the finished article is usually very small. In jute mill machinery for instance it is stated that the cost of pig iron is about one per cent. of the whole cost. A theoretical reduction of the duty therefore by Rs. 7 per ton would result in a reduction of  $\frac{1}{10}$  per cent. of the total cost. Mr. Fairhurst stated that in the case of a jute loom, weighing about 10 cwts. and costing Rs. 650, if the duty were removed, the reduction would amount to about Rs. 3-12-0; on a jute cop costing about Rs. 4,000 the manufacturer would save Rs. 18-12-0. No manufacturer of machinery has appeared before us to deny these statements and the Britannia Engineering Works which had submitted an application for the restoration of the duty of 2½ per cent. on machinery subsequently withdrew it. Mr. Sawday also gave similar evidence which has not been seriously contradicted by any witness. He stated that, if the duty on pig iron were removed, the consequential reduction in the cost of a plough would not be more than one anna. He further stated that a sugarcane mill required from 1 to 1½ cwts. of pig iron. The removal of the duty would in this case allow of a reduction amounting only to from four to six annas. These illustrations point to the conclusion that the resulting benefit to the consumer may be regarded as almost negligible.

10. It may however be thought that if the revenue duty is maintained, the combine may revert to the policy of charging prices approximating more or less to the import price plus duty and that this will adversely affect the large consumers, particularly the railways who manufacture large quantities of cast iron sleepers.

Possibility of change of combine's policy.

We believe this to be unlikely. No combine can afford to resist the pressure of public opinion indefinitely. Moreover, it is more profitable for the combine to sell locally than to export their pig iron and in their own interest it should be their policy to encourage its use in India by offering attractive prices. Further, the competition of the Mysore Iron Works, as we have already stated, has an appreciable effect on prices in certain areas. Finally, the Iron Companies themselves are large manufacturers of castings particularly cast iron sleepers. The Railway companies are the main consumers of these products and since it is always possible to substitute wooden or steel for cast iron sleepers, the Railway companies have an effective method of controlling prices should these be excessive.

11. We have now to consider the effect of the removal of the duty on the manufacturers of pig iron. Out of a total of about 150,000 tons of pig iron used in India, about 40,000 tons represents the amount taken by small consumers. Assuming that the removal of the duty would result in a fall of Rs. 5 per ton in the price of pig iron sold to the bazaar, the net loss to the companies would be about Rs. 2 lakhs. Of this, according to the evidence tendered by the Indian Metallurgical Association, about a lakh of rupees represents the loss which would be incurred by the Tata Iron and Steel Company; the other two companies, the Indian Iron and Steel Company and the Bengal Iron Company, would each suffer a diminution of profit of about half a lakh of rupees. With the latter two companies we are not concerned. The protection of pig iron is not a question which has been referred to us for examination nor have we been supplied with the costs of these companies. As regards the Tata Iron and Steel Company the position is somewhat different. In assessing the protection which would be required for steel, we took into account the probable profits from pig iron and any reduction in such profits would adversely affect the scheme of protection. It is therefore necessary to consider the margin of profit which is afforded by the present average price received by the Company.

12. The production of the Tata Iron and Steel Company was interrupted by strikes during a considerable part of 1928 and the figures subsequent to March 1928 cannot be taken as sufficiently reliable for our purpose. We therefore propose to take the costs during the year 1927-28 which may be regarded as a normal year. Owing mainly to a drop in the price of coal since we reported in 1927, the works cost in 1927-28 amounted to Rs. 22.94 per ton. As we have pointed out in our previous reports, it is not easy to determine the precise amount of overhead charges and profit which may be allocated solely to the surplus pig iron which is ordinarily sold in the market in India or abroad. In our Statutory Report of 1927 we estimated that the amount of surplus pig iron which would have to be sold as such during the seven year period of protection would on an average be 60,000 tons a year,

and on this we allowed a margin of Rs. 15 per ton over the works costs to cover overhead charges and profit. We have no reason to suppose that this sum of Rs. 15 per ton is excessive and the price which would give the return which we took into account in our scheme for the protection of the Steel Industry, would at the present moment be Rs. 38 per ton. It is true that the quantity of surplus pig iron sold at present is considerably in excess of 60,000 tons and the aggregate profits on pig iron, therefore, realised by the Company at the present moment are higher than those taken into account by us. But without re-opening the whole scheme we cannot assume a higher figure for the average period than that of 60,000 tons. If the surplus pig iron exceeds the quantity assumed by us it follows that the production of steel has been on an average less than that taken into account by us. Without going into the question of the output of steel it would be inexpedient therefore to take into account any profit which, in the peculiar circumstances now prevalent, the Steel Company may be making in excess of the Rs. 9 lakhs for which we allowed.

13. In considering the effect on the scheme of protection of the removal of the revenue duty on pig iron it appears appropriate to take the average price realised by the Tata Iron and Steel Company in 1929 because, as we have stated, there has been a distinct drop in the realised prices since 1927-28 and there is no indication that the prices are likely to rise appreciably above the present level. During the first eleven months of 1928-29 the Steel Company sold in India 26,302 tons at an average price of Rs. 49-4-0 f.o.r. works. It exported to foreign countries during the same period 103,424 tons for which it realised Rs. 38-4-4 per ton. The average price therefore for all pig iron sold by the Steel Company amounts to Rs. 40-8-0. It will be seen that the average price realised is in excess of the price which we took into consideration in our scheme of protection for steel by only Rs. 2-8-0. We have been informed that if the duty on pig iron is removed the price of pig iron sold in the bazaar will be reduced by about Rs. 5 per ton. The Steel Company estimate that their bazaar sales amount to about 20,000 tons a year and a reduction of Rs. 5 per ton on these sales would reduce the average price very nearly to the level which we took into account in our scheme of protection for the Steel Industry.

14. So far then as our scheme of protection for the Steel Industry is concerned, it may be urged that there is no objection to the removal of the duty. At the same time we cannot think that the present is an appropriate time for its removal. We cannot overlook the fact that the Steel Company as well as the other Indian companies manufacturing pig iron are far too dependent on foreign markets. The bulk of their output is exported, principally to Japan

and America. The following figures relating to the sales of Indian pig iron were supplied by the Indian Metallurgical Association :—

	Sold in India. Exported.	
	Tons.	Tons.
1925-26	90,533	336,766
1926-27	140,646	320,120
1927-28	138,338	397,004

Even a comparatively small variation in the price of pig iron sold abroad might react unfavourably on our scheme of protection for the Steel Industry and in these circumstances the importance of a secure and profitable home market cannot be overestimated. Further, the Steel Company has recently been exposed to considerable losses by a continued strike in its works and though the strike is said to have ended, the dislocation of business caused by it apparently has been so great as to prevent the Steel Company from attaining that output of steel which was anticipated before the strike and was taken into account by us in our Statutory Report. In these circumstances the Company cannot afford to incur a further loss however small. For these reasons we think that so far as the Steel Company is concerned the removal of the revenue duty will not be in the national interests.

15. There is, however, another reason which makes us think that even if the Steel Company requires no protection the revenue duty should be retained. The Mysore Iron Works which are the property of the Government of Mysore, manufacture charcoal pig iron. Though the works are situated in the territory of an Indian State, they are from the national point of view, of as great importance as any works situated within British India and any action in British India which would embarrass them should be deprecated. The works are well equipped and manufacture is carried on entirely under Indian management under conditions which may be regarded as reasonably efficient. The manufacture of pig iron has been going on since 1923 but it is only recently that anything like the full output has been reached. We have examined the costs submitted to us by the Mysore Iron Works and having regard to the peculiar conditions of manufacture we are satisfied that on the whole they may be considered economic. There is room for hope that in course of time they will be reduced considerably below their present level. As regards quality the pig iron produced by the Mysore Iron Works may be regarded as being superior to the coke pig iron produced in British India. Its phosphorus content is lower than that of pig iron in British India and it was at one time thought that it would be suitable for the manufacture of steel castings and spring steel by the converter process. It was indeed stated in the Legislative Assembly on behalf of Government in the course of the debate on the Steel Industry (Protection) Bill, 1928, that the Kumardhubi Steel Works which employ this process, used a certain proportion of Mysore pig iron. This however was at a time when the protection

of steel castings was under consideration, and we have been unable to ascertain that any orders have since been placed with the Mysore Iron Works. It would appear that while the phosphorus content of Mysore pig iron is lower than that of ordinary coke iron it is not sufficiently low to be used economically in the manufacture of steel castings. There is thus no demand for charcoal pig iron as such in the country at present and these works have to sell their output in competition with coke pig iron which can be produced at a much lower cost.

16. In the manufacture of charcoal pig iron the following by-products are obtained: acetate of lime, methanol, methyl acetone and wood tar. For accounts purposes cost of production. iron pipes have also been treated by us as a by-product. After giving credit for all the by-products the net works costs amounted to about Rs. 33 per ton during the earlier part of this year. At our request the manager of the works prepared an estimate of future costs when full output is reached and he expects them to come down to Rs. 27 per ton. The cost at the present moment may be taken at Rs. 30 per ton on an average. It is difficult to estimate the works costs of pig iron with any precision because it is very largely dependent upon the sale prices of the various by-products which there is evidence to suggest are liable to serious fluctuations. We think that if we took Rs. 30 a ton as the average works cost upon the present day prices of the by-products we should not go far wrong. As regards overhead charges and profit it is easier to make an estimate. The plant and equipment cost a sum in the neighbourhood of Rs. 2 crores. We think—and it is agreed—that this no longer represents the true replacement value of the plant and that in present day circumstances a plant of this capacity could be erected at a cost of about Rs. 1 crore. A considerable proportion of this amount was spent on the equipment of tramways for the haulage of wood and other materials and on other accessories which do not depreciate as rapidly as the pig iron plant. For this reason though in all our previous enquiries we have allowed depreciation at the rate of  $6\frac{1}{4}$  per cent. on the whole block value, in this case we think that this amount would be distinctly excessive. Depreciation at the rate of  $3\frac{1}{2}$  per cent. in our opinion would be adequate. The working capital required is stated to be Rs. 20 lakhs per annum. This sum appears at first sight to be excessive but the works are handicapped by the fact that most of the by-products as well as considerable quantities of pig iron have to be exported and often have to be stocked for long periods. In these circumstances we think that at present working capital to the extent of Rs. 20 lakhs cannot be regarded as excessive, but an endeavour should be made by the management to reduce it to a more reasonable level. The works belong to the State and a return of 5 per cent. on the working capital as well as on the investment may be regarded as reasonable. After excluding the pig iron used for the manufacture of pipes which for purposes of accounts we have taken as a by-product, the quantity of pig iron left for sale may be



estimated at about 21,000 tons per annum and the whole of the charges for depreciation, interest on working capital and return on the investment have to be distributed over that production. The cost of one ton of pig iron at works, including depreciation and interest on working capital, will amount to Rs. 51.42 as follows:—

	Total Rs. lakhs.	Incidence per ton. Rs.
Depreciation . . . . .	3.5	16.66
Interest on working capital at 5 per cent. . . . .	1.0	4.76
Total overhead . . . . .	4.5	21.42
Works cost . . . . .		30.00
		51.42

17. The average price realised by the Mysore Iron Works for sales in India, which may be taken at about 11,000 tons, is Rs. 55 per ton: the remainder of their output, viz., 10,000 tons, has to be exported and the average price realised is Rs. 42 per ton. The average realised price therefore for all pig iron sold in India and abroad is Rs. 49 per ton. It will thus be seen that though no actual loss is incurred on working expenses, the overhead charges calculated at much lower rates than in any of our previous enquiries are not completely covered by the realised price, while the State obtains no return on its investment. We realise that there are indirect advantages particularly in the direction of technical and industrial training resulting from the establishment of these works which may reconcile the Government to the loss of interest on its outlay. But, if the enterprise is to continue, depreciation at least must be fully covered. If, as the management expect, the works costs are reduced to Rs. 27 all charges will be met save that of return on investment. But if the duty on pig iron is removed and prices fall by approximately that amount, the future position of the concern will be full of difficulty.

18. We desire to emphasize the importance of abstaining from any action which might injuriously affect the position of the Mysore Iron Works for two reasons. In the first place this enterprise stands aloof from the pig iron combine and its competition has made itself felt in many directions in India. For instance Messrs. Kirloskar Brothers, one of the applicant firms in this case, obtain their pig iron from the Mysore Iron Works at Rs. 62 per ton at destination, a price far below the level at which they could import and also considerably below the combine's standard quotation. If a small immediate reduction in the price of pig iron is secured at the cost of the future of Mysore Iron Works, the consumer may find that the absence of effective competition may in the long run seriously prejudice his position. The second reason is that the Mysore Iron Works produce, as a by-product of wood distillation large quantities of acetate of lime, the basis of acetone, an important constituent of modern explosives. Although it is unnecessary at

present for the Cordite Factory to obtain their supplies therefrom, the existence of the Iron Works may be regarded as ensuring a reserve supply for national defence. For this reason we consider that not only should any action adversely affecting the enterprise be avoided, but so far as possible some encouragement should be given to it. The existence of a manufacturer outside the combine is of direct advantage to the railways. But in the matter of orders for pig iron, the railway companies have been not too sympathetic in the past. We understand that in the current year the principal railway companies in proximity to the works have placed orders for pig iron. We hope that the companies will be sufficiently farsighted to continue this policy.

19. Complaints regarding the prices charged by the pig iron combine have been made so frequently and have received such

publicity that we think it necessary to refer briefly to this aspect of the case. The complaint comes largely from owners of small foundries which use pig iron for making small castings of different kinds. It is urged that the price charged should be the cost of production including overhead charges and a fair profit. Stress is laid on the fact that the price paid by the consumer is the price at nearest port *plus* the ordinary railway freight not merely from the works but from the port to destination and it is urged that since the whole of this freight has not to be paid by the manufacturer the additional charge constitutes an unearned increment. It is overlooked that though under this system the Iron Companies may sometimes gain, in very many cases their profit is very considerably reduced. For example, at Bombay and Karachi sales must be made at the same price as Calcutta owing to the possibility of foreign imports and the whole of the railway freight from works to those ports falls on the manufacturer. It is for this reason that though we find that in and about Calcutta and in the proximity of the works pig iron is sold at between Rs. 60 and Rs. 70 a ton, the average price realised by the Tata Iron and Steel Company in 1928 at works for sales in India was only Rs. 49-4-0 per ton. Since the distribution of sales can never be foreseen, it would be quite impossible to work out any satisfactory system of sale based on the cost of production. It has been urged that the prices of pig iron for export are below those charged in the home market and that such differentiation is unfair. The sale of Indian pig iron abroad is more than three times the quantity sold in India, and under modern systems of mass production it is of the utmost importance that factories should be kept working to capacity. It is therefore necessary to sell abroad at the best price available. Further, in other countries it is the universal custom in the iron and steel, as in other markets, to quote lower prices for export than for home consumption and there appears no reason why Indian manufacturers should adopt any other system. Including sales for export, the average price obtained by the Tata Iron and Steel Company is Rs. 40-8-0 per ton and it is clear that if sales in Bengal were made at prices claimed by the applicants—a figure considerably below the price of

Rs. 70 to Rs. 60 now charged—the average price received by the company would fall substantially and their profits would be reduced below the figure which we took into account in framing our scheme of protection for the Steel industry.

20. We have found that the removal of the revenue duty on pig iron would not directly interfere with our scheme of protection for the Steel Industry. At the same time the advantage thereby received by manufacturers of machinery would be negligible and it has not been proved that the continuance of the duty will place them at any considerable disadvantage in competing with imported good. The removal of the duty will result in a diminution in the profits of the Iron Companies, which in the case of the Tata Iron and Steel Company may amount to about one lakh of rupees annually. In view of the recent strike at the Tata Iron and Steel Company's works we consider the present an unfavourable time for the removal of the duty. Further, the proposal, if accepted, would adversely affect the Mysore Iron Works and render their successful working a matter of considerable difficulty. Since this is the only Iron Works not included in the combine, any restriction of its activities might in the end react unfavourably on the consumer. The success of this enterprise is also of considerable importance from the national point of view, affording as it does a reserve supply of acetone for the manufacture of explosives. Our conclusion therefore is that no case has been made out upon which we can base any recommendation for the removal of the revenue duty. We think that no serious harm will be done to any consumer if it is retained until the statutory enquiry into the Steel industry takes place in 1933-34 or earlier. The whole position can then be re-examined and if it is then found that a better case is made out for its removal, the duty may be removed.

21. In conclusion we desire to express our thanks to the Indian Metallurgical Association, the Bihar and Orissa Chamber of Commerce, the Tata Iron and Steel Company and those Railway administrations which have assisted us in this enquiry with written or oral evidence. In particular we desire to thank the Government of H. H. the Maharajah of Mysore for the courtesy which they have extended to us in the course of our enquiries. On two occasions we have found it necessary to visit the Iron Works at Bhadravati and on each occasion we have been afforded every possible assistance in conducting our investigations.

P. P. GINWALA—*President.*

A. E. MATHIAS } *Members.*  
J. MATTHAI }

R. L. WALKER—*Secretary.*

*The 8th August 1929.*

***Evidence.***

**DEPARTMENT OF COMMERCE.**

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**RESOLUTION.****TARIFFS.**

*Delhi, the 28th March 1925.*

**No. 38-T. (2).**—The Government of India have received a number of representations to the effect that the development of certain industries in India is hampered by the fact that the duty on the finished article is lower than the duty on the materials which have to be imported for the manufacture of that article. A list of such representations is appended to this Resolution. The representations will now be referred to the Tariff Board. It is requested to examine these representations and any others of a similar nature which may be brought to its notice and to make such recommendations, whether general or special, as it thinks fit.

2. Firms or persons interested in the above enquiry should address their representations direct to the Secretary of the Tariff Board.

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**ORDER.**—Ordered that a copy of the above Resolution be communicated to all Local Governments and Administrations, all Departments of the Government of India, the Director General of Commercial Intelligence, the Indian Trade Commissioner in London and the Secretary of the Tariff Board.

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

**D. T. CHADWICK,**  
*Secy. to the Govt. of India.*

*List of representations.*

No.	Applicant.	Manufactured articles or works.	Rate of duty to which now subject. <i>Ad val.</i>	MAIN COMPLAINT THAT MATERIALS ARE ASSESSED AT HIGHER DUTIES.		Subsidiary request.
				Articles.	Duty.	
12	The Indian Engineering Association, Calcutta.					
13	Bell Metal Merchants' Association, Bankura.					

} Urges necessity of an early enquiry into the duties on machinery, component parts and certain raw materials.

### Indian Engineering Association.

#### A.—WRITTEN.

- (1) *Letter, dated 9th July, 1924, to the Government of India, Commerce Department.*

I am directed to invite your attention to the question of the import duties on machinery.

2. It is known to you that, in paragraphs 131 to 136 of their first report on the protection of steel, the Tariff Board raised the further question as to the extent to which the manufacture of machinery in India was likely to be affected by their proposals regarding steel. Although they were unable at the time to investigate this question fully, the Board nevertheless recognised its importance. They pointed out that it needed to be enquired into, and in paragraph 17 of their second report they emphasised the desirability of this enquiry being undertaken at an early date.

3. Many of the members of the Indian Engineering Association are interested in the manufacture of machinery in India, and they agree with the Board that an investigation is desirable. Obviously the investigation will have to include the duties levied on raw materials other than steel that are used in the manufacture of machinery. It has also been suggested that there should be a general increase of the import duty on machinery from 2½ per cent. to 5 per cent.; and that the duty on one important raw material, namely copper, should be reduced from 15 per cent. to 5 per cent. The Committee of the Association do not oppose or support these recommendations, because they are of the opinion that the subject needs to be investigated before any concrete proposals can be usefully made. But they quote the suggestions with the object of showing that the question of machinery is becoming one of urgency; and they accordingly recommend that the enquiry proposed by the Tariff Board should be undertaken as early as possible.

- (2) *Letter from the Tariff Board, to the Indian Engineering Association, Calcutta, dated the 14th December 1925.*

I am directed to refer to your representation dated the 9th July 1924 to the Government of India in the Commerce Department, dealing with the question of the import duties on machinery and to say that this matter is now receiving the attention of the Tariff Board. Under the tariff, as it stands at present, articles classed as machinery are admitted subject to a duty of 2½ per cent., whereas duty is levied on most of the materials imported for the manufacture of machinery in India at 15 per cent. and in addition certain kinds of steel pay protective duties at higher rates. The questions to be examined are:—

- (1) To what extent the present tariff operates so as to prejudice the manufacture of machinery in India.

- (2) What steps should be taken to rectify matters.

The Board do not think that any wholesale solution of the problem can be found, and believe it will be necessary to examine separately the details of each case. The first step therefore will be for the members of the Association to bring to the notice of the Board the specific cases which they desire should be investigated. In each case it should be stated:

- (1) What is the approximate c.i.f. price (per unit) of the imported machinery which competes with the Indian article.
- (2) What is the approximate cost (per unit of machinery manufactured) of the—
- (a) steel subject to protective duties,
- (b) other materials,
- required by the Indian manufacturer,

(3) What is the approximate cost (per unit of machinery manufactured) of—

- (a) the protective duties on certain kinds of steel,
- (b) the revenue duties on other materials.

In each case the materials should be specified and the cost of each (per unit of machinery) given. In the case of steel subject to protective duties the classes of steel used should be specified, and the quantities of each class required (per unit of machinery). The Board would be glad if the Association will bring this letter to the notice of their members.

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(3) *Letter, dated the 10th February 1926, from the Indian Engineering Association, to the Tariff Board.*

I am directed to refer to the previous correspondence resting with my No. 125-I. E., dated 30th December 1925, on the question of the levy of import duties on machinery.

2. The Committee submitted to the members of the Association copies of your letter, dated 14th December 1925, and they have received a number of replies. Consideration of these makes it clear that there is a marked divergence of opinion among the engineering firms as to whether the import duties on machinery should, or should not, be enhanced. The majority of those members who have expressed their views would seem to be opposed to an enhancement; but the number of replies received is not sufficiently large to justify the Committee in giving this as the opinion of the majority of the members of the Association.

3. In the circumstances the Committee do not propose to make any general representation to the Board in behalf of the Association. It will be for those members who favour an increase in the machinery duties to submit their case to the Board, and in so doing they will be required of course to answer the enquiries which you define in your letter.

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### Britannia Engineering Company, Calcutta.

(1) *Letter, dated 19th July, 1927, to the Government of India, Commerce Department.*

We have the honour to refer you to the Notification appearing in the Extraordinary Gazette of India, dated 7th June 1927, to the effect that Government will introduce legislation to remove altogether, with effect from the 1st October 1927, the duties on all articles as defined in items Nos. 51, 51A and 51B of the Import Tariff Schedule (Schedule II to the Indian Tariff Act, 1894).

The effect of such legislation will be to remit the import duty on machinery of all kinds, including Jute Mill machinery and machinery used for the manufacture of tea.

We wish to bring to your notice the fact that such a course would have a disastrous effect on those engineering works in India which manufacture jute mill and tea making machinery.

This Company has, at very considerable expense, installed the necessary plant to manufacture both jute mill and tea making machinery and has been turning out jute mill looms and softners, tea rollers, cutters, packers, etc., equal in every way to the imported article.

Even with the assistance of the existing import duty on machinery however, price competition has been so severe that, although it has been possible to obtain orders, prices are cut so fine as to show little or no profit. The mere fact, however, of obtaining such orders, even at cost price, assists materially in keeping the works going and employing the labour.



If the import duty is now removed, Indian manufacturers will definitely be unable to compete with the imported article. We hardly think it can be the intention of Government deliberately to cause hardship to engineering firms in India employing Indian labour and Indian capital, who for some years have been struggling with more or less success, to establish this new industry in the country.

It is noted that in the Notification above referred to, it is stated that—

“The removal of the duty on machinery is subject to the proviso that it may be necessary to re-impose import duty on particular kinds of machinery if it appears from the report of the Tariff Board that it is desirable to encourage the manufacture in India of any such machinery and protective duty is required for that purpose.”

We wish to emphasize the fact that if the manufacture of Jute mill and tea making machinery in India is to continue, a protective duty, even though small as at present, is essential.

We have already addressed the Tariff Board in this connection, by whom we have been referred to you. We trust, therefore, that the question of remission of duty on machinery will receive the full re-consideration of Government.

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- (2) *Letter No. 33-T (2), dated the 15th October 1927, from the Commerce Department, Government of India, to the Britannia Engineering Company, Limited, Calcutta.*

Subject.—Duty on jute mill and tea making machinery.

With reference to your letter No. ENG. 4376/RAT., dated the 19th July 1927, on the subject noted above, I am to say that, as you are aware, the duty on machinery was removed by the Indian Tariff (Amendment) Act, 1927, at the recent session of the Indian legislature. I am, therefore, to suggest that if you desire to secure the re-imposition of an import duty on the particular kinds of machinery which you manufacture, you should submit a formal application to the Tariff Board accompanied with a full statement of the reasons which, in your opinion, justify such action. I am, in this connection, to enclose a copy of this Department Resolution No. 38-T (2), dated the 28th March 1925, and to invite attention to paragraph 2 thereof.

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- (3) *Letter No. 298, dated the 16th March, 1928, from the Tariff Board, to the Britannia Engineering Company, Limited, Calcutta.*

I am directed to inform you that the Tariff Board is still awaiting receipt of a formal application in connection with your request for the re-imposition of import duties on imported jute and tea making machinery.

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- (4) *Letter No. Eng. 5191/E. L. G., dated the 27th March, 1928, from the Britannia Engineering Company, Limited, to the Tariff Board.*

**RE-IMPOSITION OF IMPORT DUTY ON IMPORTED JUTE & TEA MAKING MACHINERY.**

In reply to your letter of the 16th instant we are preparing our statement and will forward it in the course of a few days.

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- (5) *Letter No. E. N. G./5321/E. L. G., dated the 2nd May, 1928, from the Britannia Engineering Company, Limited, to the Tariff Board.*

**Re: THE RE-IMPOSITION OF IMPORT DUTY ON IMPORTED JUTE MAKING MACHINERY.**

Further to our original application for the re-imposition of import duty on jute and tea making machinery, dated 29th June last year and to our

letter of the 27th March 1928 we have carefully examined the whole question with all details and figures we have collected in this connection.

After due consideration, we would prefer not to proceed further with our application pending a 12 months' experience under the existing conditions, but if at the expiration of this period, we find it impossible to maintain our position on the market, owing to free of duty competition from home suppliers, we trust you will then be pleased to entertain our application.

(6) *Letter No. 174, dated the 27th/28th February, 1929, from the Tariff Board, to the Britannia Engineering Company, Limited, Calcutta.*

I am directed to refer to the correspondence resting with your letter No. E. N. G./5321/E. L. G., of 2nd May 1928 and to enquire whether you wish to proceed with your original representation or whether the Board may regard your application as finally withdrawn.

2. In this connection I am to request that you will be good enough to inform the Board at what rates you have been purchasing Indian pig iron during the last four years.

(7) *Letter No. E. N. G./6238/E. L. G., dated 1st March, 1929, from the Britannia Engineering Company, Limited, to the Tariff Board.*

In reply to your letter No. 174, dated the 27th/28th ultimo,—receipt of which we have pleasure in acknowledging—we would advise you that the Tariff Board may consider our application as finally withdrawn.

Regarding the 2nd paragraph of your letter—we will give you the details you ask for *re* Indian pig iron in the course of the next few days.

(8) *Letter No. Eng.-6270/DJR, dated the 11th March, 1929.*

Further to our letter No. Eng.-6238/ELG, of the 1st instant, we have much pleasure in attaching herewith a statement showing particulars of the rates at which we have been purchasing Indian Pig Iron during the last four years, as requested in your letter No. 174 of 28th ultimo.

Year.	Suppliers' Names.	Grade.	Price per ton F. O. R. Titaghur.		
			Rs.	A.	P.
1925	Indian Iron and Steel Co., Ltd.	I	49	0	0
	Do.	II	48	0	0
	Do.	III	47	8	0
	Do.	IV	47	0	0
	Do.	II	57	8	0
	Do.	IV	51	0	0
1926	Do.	II	67	0	0
	Do.	IV	63	0	0
	Do.	IV	68	0	0
1927	Do.	IV	64	0	0
	Do.	IV	64	0	0
1928	Do.	II	68	0	0
	Do.	IV	64	0	0

**Punjab Chamber of Commerce.**

*Letter, dated the 8th May, 1925.*

With reference to the Resolution No. 38-T (2), dated the 28th March 1925, issued by the Government of India, Department of Commerce, I am directed to inform you that my Committee at their meeting held at Lahore on the 5th instant recorded the following resolution:—

“ No. 28—Resolved that the practice be resumed of permitting the importation at reduced rates of duty on machinery and parts of machines, to replace, renew or maintain in a state of efficiency the plant of existing industrial concerns, and not for sale to the public, under certificates proving each such importation to be necessary, *bonâ fide*, for the mill or factory concerned.

“ Further, that this practice be extended to importation under certificate of such quantities of raw material as are *bonâ fide* necessary for the manufacture in India of such finished articles the importation of which is possible under the existing tariff, at rates lower than the rates for the raw materials of which they are composed.”

The withdrawal of the privilege referred to above has affected the activity of industrial concerns, and its restoration and extension as suggested while being greatly appreciated would provide a simple means of assisting the manufacture in India of the comparatively small number of certain articles likely to be produced till Indian industry greatly expands, without taxing the entire population and immediately diminishing the existing trade in such articles now imported from abroad in very large numbers.

The agency for the grant of the requisite certificates ought not to be difficult to establish, as the Department supervising the operation of the Indian Boilers and Prime Movers Act, the Workmen's Compensation Act and other legislation for the regulation of industrial concerns are active under the guidance of the Department of Industry.

*Letter No. 672, dated the 3rd July, 1929, from the Tariff Board, to Messrs. Tata Iron and Steel Company, Limited, the Indian Iron and Steel Company, Limited, the Bengal Iron Company, Limited, and the Mysore Iron Works.*

I am directed to inform you that the Tariff Board will very shortly consider the applications of certain manufacturers of machinery for the removal of the existing revenue duties upon raw materials required in the manufacture of machinery. One of these raw materials is pig iron, and I am directed to enquire whether you have any objection to the proposal to abolish the present revenue duty of 10 per cent. on big iron, and, if so, to request you to forward to the Board at as early a date as possible a statement (with five spare copies) of the grounds upon which you desire to oppose this proposal.

[2. As the Mysore Works are situated within the territory of an Indian State, the Board, as at present advised, is not in a position definitely to express any opinion on the question whether, within the terms of its reference it can take into account the probable effect on that particular enterprise of the removal of the duty. The Board will, however, welcome the expression of your opinion on this point as well as on any other aspect of the case in which you may be interested. I am also to enquire whether it would be convenient for you to arrange for the Board to visit your works about the end of July.]

[ ] to Mysore Iron Works only.

## Mysore Iron Works.

### A.—WRITTEN.

(1) *Letter, dated 16th October, 1928.*

#### THE PROPOSAL TO REMOVE THE REVENUE DUTY ON PIG IRON IN INDIA.

The conditions created by the War led to a considerable expansion in the iron and steel industry all the world over and the subsequent contraction of the demand is responsible for a depression on an unprecedented scale. Owing to a number of special causes traceable directly or indirectly to the effects of the War, the normal growth of the demand has been interfered with and the world competition has become so keen that every country has attempted to safeguard the industry by protective duties or bonus systems or a combination of both. Even in England, the only country which has no protection, the necessity for safeguarding the iron and steel and heavy engineering industries has been recognised on all hands and only political causes are responsible for the absence of a protective tariff. Relief in other directions is, however, under consideration.

2. Conditions are even worse if we take the demand for pig iron alone. While before the War, the world production of pig iron exceeded that of steel, it is now about 15 per cent. less than the steel output and about 20 per cent. less than the present productive capacity.

The peculiar situation that now prevails in the industry makes it necessary for every country to find an export market for its surplus output. Competition is therefore so keen that manufacturers are forced to sell even below cost price and protective duties and State aid are absolutely essential to protect home industries especially in undeveloped countries like India.

3. India has many natural advantages for the establishment of a successful iron and steel industry and it is believed that the cost of production of pig iron in India is at present the lowest in the world. But development is retarded as the local demand for pig iron is at present comparatively small. The general industrial depression and the natural reluctance to invest capital to start new industries using pig iron as raw material to meet even the existing demand for finished products, account mainly for this state of affairs. The position has been rendered worse by the acute depression in the cotton industry so that the foundries in Bombay, Ahmedabad and other centres are practically idle. Even those that operate use cast iron scrap. Unfortunately no correct statistics are available but it will be no exaggeration to say that in Central and Southern India, more than 75 per cent. of the foundry capacity is at present idle. Outside the Railway workshops and the foundries attached to blast furnaces, there is hardly thirty to forty thousand tons of pig iron now being sold at present in the whole of India. And yet there is a steady demand for all kinds of cast iron and steel finished articles. With proper support, India is bound to establish steel and engineering industries to meet all the demand within the country. The Balfour Committee on Industry and Trade have, in their survey of metal industries published this year, remarked as follows with reference to the immense possibilities of development in India.

“The development of an iron and steel industry in a new country is beset by great difficulties connected not only with actual production, but even more with the varying requirements of the market. For example, each of the British Dominions require every class of iron and steel products in its natural life, and yet except in India, the demand for many classes of products is so small in volume that they could not be produced at a competitive price unless a large export trade could be developed in addition. Most of the countries which have established iron and steel industries in the last few years, are clearly not likely to reach this stage for many years to come.”

"India has greater possibilities and may in time manufacture a large part of the iron and steel required for her own use. She has already developed a considerable export trade in pig iron."

4. In the meantime the industry requires full measure of protection. This has now been afforded to steel but not to pig iron and castings. It is even feared that the protection afforded to steel in India has indirectly stimulated the import of foreign cast iron pipes into the country and is responsible for the present low prices. Continental and even British pipes are being sold in India at what is believed to be less than their cost price. It may in this connection be interesting to note the protection afforded to both pig iron and cast iron pipes in Australia where the duties are as follows:—

	British Preferential Tariff.	Intermediate.	General.
	Per cent.	Per cent.	Per cent.
Pig Iron	20	3	40 per ton.
Cast Iron Pipes	48	65	£0 ..

5. In competition with manufacturers in other countries, the industries in India have many disadvantages. The buyers are scattered over a large area and normally railway transport is costlier than by sea. For instance, freight on pig iron to Bombay from an English or Continental port will be equal to and sometimes cheaper than even the special freight from Bhadravati to Bombay. Besides, the Railways in India are divided into a number of separate administrations and even in spite of the recommendation of the Indian Industrial Commission, no telescopic rates applying over all the Railways have yet been introduced.

Moreover, the local industries lose on their exports by the present exchange ratio whereas the foreign manufacturers derive a corresponding advantage. The Mysore Iron Works have been adversely affected by the present ratio not only on account of its influence in determining the selling rate of pig iron in India but it has reduced by over 10 per cent. the rupee realisations on account of foreign sales, and all the bye-products are at present exported.

6. There is thus need for a considerable measure of protection and other help from the State for pig iron and castings if the future of the industry is to be assured and in this view there can hardly be any justification to remove the existing revenue duty of 10 per cent.

7. Even from the stand point of the manufacturers of machinery who have now moved for the removal of the duty, such a step will hardly give them appreciable relief. Generally speaking iron castings form an inconsiderable part in the manufacture of machinery and the reduction of the ruling rates of pig iron by about Rs. 7.5 a ton may at best only help them to the extent of one or two rupees a ton of machinery produced, which is negligible.

8. In this connection, the Works should like to bring to the notice of the Tariff Board a few circumstances which are peculiar to the Bhadravati Iron Works.

The Bhadravati Iron Works are the biggest wood distillation and charcoal iron plant in the British Empire. The plant started operation in 1923 and has thus been in operation for about six years. Difficulties incidental to the starting of a new undertaking like this in an industrially backward region has been largely overcome and both charcoal pig iron and wood distillation products are being made at the lowest rates in the world, thanks largely to the abundant natural resources of the country. But the absence of the demand for special purposes of a superior product like charcoal pig iron and the competition of synthetic methanol, acetic acid, and acetone have hampered its establishment on a firm basis and its rapid growth. At present the Works

are selling in the country charcoal pig iron in competition with ordinary coke iron. The exports no doubt yield a satisfactory gross return but it is difficult to secure freight on reasonable terms from Madras or Marmugao which are the nearest ports to our Works so that the net return is comparatively poor. The present condition of the cotton mills has considerably contracted the market in territory close to the Works and there is severe competition from coke iron which is considerably cheaper to produce.

In spite of these difficulties, the Works have been paying their way. Considerable developments both in regard to Iron and Steel and the utilization of the vast forest resources are possible if only the Works which are a pioneer in this country, are shown to be successful. It is true there is no coal nearby but it is possible to generate cheap electrical power in close proximity and develop the industry along lines adopted in countries like Sweden and North Italy. What the Bhadravati Works need at present is a substantial measure of support as long as the present depression in the Iron and Steel and Engineering industries lasts and also exchange continues to be unfavourable. Once normal conditions are restored and the Iron and Steel industry takes its proper place in the general world economic conditions, there will be no need for special support.

9. In the present condition of the Bhadravati and other Iron Works in India and in the interests of the future industrial development of the country on sound lines, it is desirable that the Tariff Board should recommend a substantial measure of protection for pig iron and castings including pipes.

(2) *Questionnaire regarding Removal of Revenue Duty on Pig Iron.*

INTRODUCTORY.

1. When was your firm established? Is it a public or private registered Company or is it an unregistered firm?
2. (a) To what extent is the capital invested in your firm held by Indians?
- (b) How many Indians are employed in the superior management?
3. Please enumerate the various products which you manufacture?
4. When did your Works commence to manufacture?
5. Please state the quantity of each different product which your Works as at present equipped could manufacture per annum if working to capacity?
6. What was the actual output of each product for the last five years?
7. Where are your Works? Do you consider they are advantageously situated in respect of:—
  - (a) Supply of raw materials.
  - (b) Sources of power or fuel.
  - (c) Markets.
  - (d) Other consideration such as labour supply.
8. (a) Do you consider that your products are equal in quality and appearance to similar products in the market?
- (b) Do they command the same price in competitive markets?
- (c) If not, to what cause do you ascribe the lower price of your product?
- (d) Apart from the question of quality, is there any prejudice against your products either generally, or in particular markets or on the part of a particular class of consumers?
9. (a) What are the principal industries in which your products are used?
- (b) Are any of your products used for the manufacture of explosive for military purposes?

10. Are there any climatic or other difficulties which prevent your manufacturing all your products all the year round? If so, please explain the reason and state whether the stoppage tends to raise your cost of production above that of other countries?

11. What process do you use for the manufacture of each of your products?

*N.B.*—When the process is known by a special name, no description of the process need be given. The name only of process should be stated.

#### RAW MATERIALS.

12. What are the principal raw materials used in the manufacture of your products?

13. What would be your annual requirements of raw materials if your plant were working to its full capacity?

14. What quantity of each raw material is required for the production of one unit of each of your products?

15. What are the main sources of supply for each of your raw materials?

16. Which of these materials are:—

A. Imported from abroad.

B. Manufactured and purchased in India.

In case A please give:—

(a) country of origin,

(b) f.o.b. price (in sterling),

(c) port of importation,

(d) freight, insurance, etc.,

(e) landing charges,

(f) transport charges to the factory, and

(g) Customs duty.

*N.B.*—If information as regards (b) and (d) is not available the c.i.f. price should be given.

In case B please give:—

(a) market price, and

(b) transport and other charges

and state where and by whom the materials are manufactured.

17. Which of the materials mentioned in the answer to question No. 16, if not already manufactured in India, are—

(a) likely to be manufactured,

(b) not likely to be manufactured.

Please give reason for your reply.

18. (a) Do you get any special freight rates sea, river or rail for your raw materials?

(b) Do you consider you are at any disadvantage in this respect?

(c) If so, have you any proposals to make?

19. Do you consider that this industry is assured of a sufficient supply of its principal raw materials:—

(a) foreign,

(b) domestic,

for a reasonably long period?

20. (a) Are there any natural raw materials in India which in the near future may enable you to dispense with the employment of skilled labour imported from abroad?

(b) If so, indicate briefly:—

(i) the localities in which they exist,

(ii) what reduction in price may be expected?

21. Would the manufacture of any of your products automatically cease if for any reason it become impossible to import its principal raw material?

22. Are there any raw materials which are the monopoly of:—

(a) a particular country or

(b) particular Trusts, Combines or Corporations?

#### LABOUR.

23. Do the processes of manufacture require such expert supervision involving the employment of skilled labour imported from abroad?

24. What number of imported labourers are employed at present, and what would be the number required if the factory were working to full capacity?

25. (a) What progress has been made since the factory was established in the substitution of Indian for imported labour?

(b) Is it anticipated that eventually the employment of imported labour will be unnecessary.

(c) What facilities are given to Indian workmen to acquire training in skilled work or for training apprentices?

26. How do the rates of wages paid to imported workmen compete with the rates paid for similar work in other countries?

27. (a) What is the total number of Indian workmen employed?

(b) What are the average rates of the different classes?

28. Please give total amount of wages and salaries at the Works for the past five years; any increase in the rates of wages should be noted with the date upon which it was given.

29. (a) Is the Indian labour force sufficient?

(b) Is it drawn from the vicinity of the factory or from other parts of India?

30. (a) Does the Indian labourer improve with training?

(b) How does he compare in efficiency with European workmen employed on similar work?

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

#### POWER (INCLUDING FUEL).

32. (a) What is the nature of the power used in the Factory?

(b) If steam, what is the fuel used, and is it available in sufficient quantities?

33. What is the total quantity of fuel consumed per unit of output, whether for power production or for other purposes?

34. What is the price per ton of fuel:—

(a) at source of supply,

(b) at works.

35. (a) If electric power is used, from what sources is it obtained and what is the cost per unit?

(b) How does the cost compare with the rates obtainable elsewhere in India and in other countries?

(c) What is the consumption of power per unit of output?

#### MARKET.

36. What is the total Indian production so far as it can be estimated of each of your products for the past five years?



37. What do you estimate is the total Indian demand for each of these products?

38. Do you think that the demand will substantially increase in the near future? If so, please give the reasons.

39. Where are your principal markets in India and how far are they from your Works?

40. (a) Are there any markets in which owing to their distance from a port you can compete more easily with foreign manufacturers?

(b) If so, please state these markets and the approximate demand for each product in each market.

41. Do you think that you will ever be able to export your products? If so, to what countries and in what quantities.

42. (a) Are any of your products purchased by Government or other public bodies or departments?

(b) If so, please state the extent of their purchases and the prices paid during:—

(i) the year (war),

(ii) each of the last 5 years.

(c) Were the prices received by you during the war the current prices prevailing at the time in India?

#### FOREIGN COMPETITION.

43. Which foreign countries are your keenest competitors in the Indian market?

44. Do the conditions of manufacture in India differ materially from those in competing countries? If so, what are the main differences?

45. Have conditions in India led you to adopt processes of manufacture different from those practised in the chief competing countries? If so, has the foreign manufacturer an advantage in this respect?

46. Please state:—

(i) the prices at which imported material has landed in India under the following heads:—

(a) f.o.b. price,

(b) freight,

(c) insurance and trade charges,

(d) customs duty,

(e) landing charges,

(ii) The prices realised by you each year of the past five years.

47. (a) From what sources is information obtainable as to the prices at which imported articles enter the country?

(b) How far do you consider the information obtained from these sources is reliable?

48. (a) Are there any Trusts or Combines operating in pig iron and steel in the Indian and other foreign markets?

(b) If so, please give as far as possible a brief history of their origin, financial position and general activities.

(c) To what extent have their operations affected you in the Indian market?

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

50. (a) Do you manufacture any material which in competing countries are produced as by-products?

(b) If so, state briefly the reasons which prevent you from adopting similar processes of manufacturers.

51. In which of the Indian market is foreign competition keenest?

52. (a) Has there been a substantial fall in the prices of imported material since the war?

(b) If so, to what causes do you attribute this fall in price?

(c) How far do you consider these causes permanent?

53. Please compare the freight which you have to pay to reach your main markets in India with the total freights sea and rail payable on imports to the same markets.

54. Compare the Railway freights paid by importers from the ports to selected up-country markets and the railway freights paid on the produce of your works to the same markets.

*N.B.*—The mileage between port and the selected stations and between the factory and same stations and the rates per unit per mile should be noted.

55. Do you consider that compared with foreign manufacturers, the Indian manufacturer is at a disadvantage in respect of any of the following:—

- (a) Cost of plant and machinery.
- (b) Cost of expert labour.
- (c) Cost or efficiency of ordinary labour.
- (d) Collection and transport of raw materials.
- (e) Cost of raw materials and consumable stores.
- (f) Freight on finished goods.
- (g) Maintenance of stocks of spare parts.
- (h) Customs duty on imported materials.
- (i) Raising of capital.

Wherever it is considered that the Indian manufacturer is at a disadvantage, reasons supported by figures should be given in support of your contention.

56. Which of the disadvantages mentioned in your answer to question 55, do you consider permanent and which temporary? For what period do you consider the temporary disadvantages are likely to operate?

#### INTERNAL COMPETITION.

57. (a) Is there any serious competition among Indian manufacturers.

(b) If so, who are your principal competitors and in respect of which of your products?

58. Has any attempt been made by Indian manufacturers to eliminate competition by mutual agreement regarding manufacture or by the formation of a joint sales organisation or otherwise?

#### EQUIPMENT.

59. (a) Do you consider that your Works are sufficiently large as an economic unit of production to ensure economy?

(b) What, in your opinion, is the smallest unit of production which can be operated economically under present day conditions.

60. Does the manufacture of your products require the use of elaborate and expensive machinery?

61. What percentage of your total outlay has been incurred on plant and machinery?

62. Give a brief description of your plant and machinery.

63. Do you consider your machinery and other equipment and the processes of manufacture practised in your Works sufficiently up-to-date and efficient to enable you to compete successfully against foreign manufacturers?

64. Have you adopted any new processes of manufacture or have you installed new plant and machinery in replacement of or, in addition to, your original plant? If so, give a brief description of the process or plant, and state whether the results have fulfilled your expectations.

65. What parts of the machinery, if any, are manufactured in India?

#### CAPITAL ACCOUNT.

66. What is the block value of your property, as it stood in your books at the end of the last complete year for which figures are available, under the following heads:—

- (a) Lease and concessions.
- (b) Lands.
- (c) Buildings.
- (d) Plant and machinery including tramway and ropeway.
- (e) Other miscellaneous assets.

67. Do the figures given in answer to question 66, represent the actual cost of the various assets, or their value after depreciation has been written off. In the latter case, please state the total amount written off for depreciation since manufacture commenced, and in the former case the total of the depreciation fund (if any) which has been accumulated.

68. Apart from any question of an increase in the replacement cost of plant and machinery due to a general rise in the price level, are the sums actually set aside for depreciation since manufacture commenced equal to, greater than, or less than, the sum which ought to have been set aside according to the rates of depreciation which you consider suitable? See question 32.

69. What do you estimate would be the present day cost under the heads:—

- (a) Buildings, and
- (b) plant and machinery,

of erecting a works having the same output as your present works under the same heads, and would the operating cost of a new works established now be greater or smaller than yours?

70. What is the total—

- (a) authorised,
- (b) subscribed,
- (c) paid up capital,

of the company? How is it divided between preference, ordinary and deferred shares?

71. At what rate of interest is the dividend payable on the preference shares. Are these shares entitled to cumulative dividends? If so, state the dates on which they were first entitled to rank for dividends, and whether any dividends are in arrears.

72. Under what conditions do the deferred shares, if any, participate in the profits of the company?

73. What is the amount of the debenture loans (if any) raised by the company? At what dates were they issued, and what is the rate of interest payable. If any period has been fixed for the redemption of the debenture loan, it should be stated. Similarly, if a debenture sinking fund has been established the annual rate of contribution should be given.

74. What is the amount of reserve fund (if any) created by the Company? Has this been accumulated by surplus profits or from other sources, e.g., by the issue of share at a premium.

75. What additional capital (if any) would it be necessary to raise in order to carry out any scheme of replacement or extension of plant which the works contemplate?

**COST OF PRODUCTION.**

*(a) Works costs.*

76. Please fill up the two forms annexed to the questionnaire regarding works.

77. Was the Works cost increased in any of the years for which figures have been given owing to the fact that the Works were working at less than their full capacity? If so, which were the items principally affected. To what extent would they probably have been reduced if a full output had been obtained?

78. Do you regard the works cost of the last year for which figures have been given as abnormally high for any other reason? If possible furnish an estimate of the Works cost for some future year on the assumption that:—

(a) conditions are normal,

(b) an output is obtained equivalent to the full capacity of the plant.

79. Have you adopted a system of cost accounting? If so, will you place before the Board, for examination and return, your cost sheets for the last complete year for which they have been prepared?

80. Are you in a position to furnish the Board with information as to the works costs in any competing country for any year since the war?

*(b) Overhead charges.*

81. In determining your cost or production in what proportion do you allocate among your different products each of the various items which constitute your overhead charges? Please explain how this proportion is determined.

*(i) Depreciation.*

82. (a) What are the rates of depreciation allowed by the Income-tax authorities.

(b) Do you consider that, in calculating the cost of production these rates of depreciation are suitable?

(c) If not, what rates do you suggest and why?

*(ii) Working capital.*

83. What is the working capital which the Company require according to the output equivalent to its full capacity?

84. Is the Company able to provide all the working capital it requires from share and debenture capital, or is it necessary to borrow additional capital for this purpose?

85. If additional working capital has to be borrowed, what is the amount borrowed and the rate of interest payable?

86. Compare the working capital with the cost of one month's output (works cost only, excluding overhead charges).

87. What is the average value of the stocks of finished goods held by the Company? What period normally elapses between production and payment?

88. Does the company find it necessary to hold large stocks of coal or raw materials? If so, the average value of the stocks held should be stated.

(iii) Agents' Commission and Head office expenses.

89. Has the Company a Head office other than the office of the local management? Is it under the control of a firm of Managing Agents?

90. If the answer to question 89 is in the affirmative, please state:—

(i) the annual amount of the Head office expenses.

(ii) The Agent's commission.

91. What charges do you incur on account of:—

(i) Head office expenses.

(ii) Agents commission per unit of each finished product.

92. What rate of dividend do you consider to be a fair return on the capital invested?

#### CLAIM FOR PROTECTION.

93. In paragraph 97 of their report, the Fiscal Commission laid down three conditions which in the ordinary cases ought to be satisfied by industries claiming protection. Do you consider that those conditions are satisfied in the case of the good distillation and charcoal iron industry.

(a) Do you claim that the industry possesses natural advantages, such as an abundant supply of raw materials, cheap power, a sufficient supply of labour or a large home market?

(b) Do you claim that, without the help of protection, the industry is not likely to develop at all, or is not likely to develop so rapidly as is desirable in the interests of the country?

(c) Do you claim that the industry will eventually be able to face world competition without protection? These conditions have been approved by the Government of India and by the Legislative Assembly, and it is therefore of great importance to ascertain whether they are satisfied. If you consider that your industry fulfilled these conditions, the reasons for your opinion should be fully explained.

94. Do you claim that your industry satisfied either or both of the conditions mentioned in paragraph 98 of the Fiscal Commission's report, *viz.*—

(a) That the industry is one in which the advantages of large scale production can be achieved, and that increasing output would mean increasing economy of production?

(b) That it is probable that in course of time the whole needs of the country could be supplied by the home production?

95. Do you consider that your industry is of importance on national grounds and therefore deserves protection apart from economic consideration?

96. Do you consider that there are any features of the industry which make it peculiarly suitable to Indian economic conditions?

97. What special measures (if any) do you suggest to safeguard your industry against underselling by reason of any cause other than a reduction in the foreign cost?

98. What is the amount of protection the industry received at present owing to:—

(a) the existing Customs duties,

(b) transport charges between the country of production and the port of entry, *i.e.*, freight, insurance, trade charges and landing charges?

99. What is the amount of the protection which you consider necessary?

*N.B.*—The reasons for proposing the particular rate recommended should be explained.

100. Do you recommend any form of assistance other than a protective duty? If so, please state what form such assistance should take and the reasons for your proposal.

(3) Dated the 8th November 1928.

1. The Mysore Iron Works is the property of the Government of His Highness the Maharaja of Mysore. The construction of the Works was sanctioned in 1918 and the operations commenced in January 1923.

2. (a) The Works have been financed entirely from State funds.

(b) The staff at present is entirely Indian.

3. (1) Charcoal pig iron.

(2) Acetate of lime.

(3) Chemically pure methanol 99½ to 99¼ per cent.

(4) Methyl acetone.

(5) Denaturing grade methanol.

(6) Wood tar.

(7) Cast iron pipes.

(8) Special castings.

(9) Black paint.

(10) Wood preservative.

(11) Wood tar pitch.

(12) "Kreso"—Disinfectant.

4. Pig iron—January 1923.

Wood distillation products—April 1923.

Tar plant products—February 1925.

Alcohol refinery products—July 1926.

Cast iron pipes—October 1926.

5. (1) Pig iron—28,000 tons.

(2) Acetate—2,200 tons.

(3) Alcohol products—180,000 gallons.

(4) Tar—2,000 tons.

(5) Cast iron pipes—6,000 tons.

(6) Other castings—1,000 to 1,500 tons a year depending upon the products.

6. Total output from 1st July 1923 to 30th June 1928:—

	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.	TOTAL.
Pig iron . . . Tons.	12,680	17,598	17,891	20,025	17,169	85,393
Acetate . . . ,	1,086	1,248	1,310	1,495	1,605	6,744
Alcohol products Gals.	99,751	116,795	109,313	148,360	183,269	657,508
Tar . . . Tons.	2,165	2,047	1,974	2,377	2,503	11,066
Castings . . . ,	263	813	620	211	241	2,147
Pipes . . . ,	...	...	...	3,220	4,324	7,544
Black paint . Gals.	...	...	8,184	7,715	9,700	17,415
Wood preservative ,	...	...	4,007	2,500	11,725	14,225
Pitch (wood) . Tons.	...	...	23	132	238	370
Kreso (disinfect- Gals. ant.)	...	...	...	...	945	945

7. At Bhadravati on the Birar-Satmoga Section of the Mysore Railway.

## Distance from—

Bangalore—159 miles  
 Madras—381 miles  
 Marmugao—331 miles  
 Poona—523 miles.  
 Bombay—642 miles  
 Davanagore—By rail 100 miles, by road 70 miles.  
 Hubli—By rail 189 miles, by road 150 miles.  
 Mangalore—By rail 664 miles, by road 135 miles.  
 Bhatkel—By road 120 miles.  
 Jog Falls—By road 76 miles.

(a) Yes. All raw materials available within a radius of 25 to 30 miles.

(b) At present, the main fuel used is wood which comes from the vast forests within easy reach of Bhadravati. 700 square miles of forests have been allotted but the present supply is drawn from an area of only 350 square miles.

(c) The Bhadravati Works are the only one of the kind in India and in the East. Even ignoring the special qualities of charcoal iron, there is no undertaking producing iron in the whole of Deccan and Southern India. Unfortunately, however, the market has been on the down grade ever since the Works started in 1923. Owing to the present industrial depression, the local market for our products is developing very slowly and an important share of the output including bye-products is being exported out of the country. For this purpose, the situation of Bhadravati is not at present very favourable as it is more than 300 miles distant from the nearest ports. Even these ports, viz., Madras and Marmugao, are not fully developed and do not offer the same convenience as Bombay or Calcutta. There is a project for constructing a cheap harbour at Bhatkel and to extend the railway line which is now within 70 miles of the coast. If this is done, the Works will be in a very good position in regard to exports and even transport by sea to important places like Bombay and Calcutta markets.

(d) Skilled labour of all grades is locally available and can be trained to take up the various jobs. The Works have a system of training apprentices which has worked very well.

Unskilled labour is freely coming from the Maidan parts of the State.

8. (a) Yes. In regard to quality and tests every precaution is taken and our products are as good as any in the market. The appearance and finish are fairly satisfactory but every attempt is being made to improve them so as to stand in comparison with the best in the world. In regard to our charcoal iron, the phosphorus content is not as low as in the Swedish but is less than in the American product.

(b) Yes, except that our charcoal iron sells about 5 to 6 shillings lower than the Swedish iron in Europe on account of the higher P. content.

(c) In India, we are selling our pig iron in composition with the ordinary coke iron. There is hardly any special industry which demands the use of a high grade product like our charcoal iron. Even for ordinary castings, the use of some charcoal iron in the mixture will improve the castings (*vide* Engineering Research Bulletin on "Investigation of charcoal and coke pig irons" issued by the Department of Engineering Research, University of Michigan) but it takes time before the foundrymen in India can be made to realise this.

On our exports of pig iron and chemical products, we obtain a satisfactory gross price but the distance from the ports and the want of cheap freight from Madras or Marmugao leaves us a low net return.

(d) No.

(e) (1) *Charcoal pig iron*.—The iron can profitably be used for the following purposes:—

- (i) For chilled castings such as railway wagon wheels and wheels for small wagons in the collieries.
- (ii) Castings for railway wagons, such as, axle-boxes, covers, coupler parts, etc.
- (iii) Plough shares and other parts.
- (iv) Chilled rolls for steel rolling, paper, sugar and rubber mills, sugarcane crushers.
- (v) Cylinders and hydraulics machinery.
- (vi) Malleable castings.
- (vii) Manufacture of special steels, and
- (viii) Manufacture of ordnance material.

Even for ordinary castings, the use of our charcoal pig iron will improve the quality of the casting and enable the foundrymen to use more scrap in the charge.

(2) *Acetate of lime*.—The acetate is generally used for:—

- (1) For making acetic acid by treating with hydrochloric acid or sulphuric acid. Acetic acid is used principally for coagulation of latex or rubber plantations and in the white lead, acetone, leather, explosives and textile industries.
- (2) For the manufacture of acetone by the dry distillation of acetate of lime. Acetone is used in the cordite factory.

(3) *Methanol*.—

*Chemically pure methanol*.—This is generally used.—

- (1) As a solvent in paint and varnish industries.
- (2) In the manufacture of photographic chemicals and plates.
- (3) In the manufacture of enamels, plastics, polishes, lacquer, celluloid articles and artificial leather.
- (4) In the preparation of perfumes, flavours, and confectionery.
- (5) In the manufacture of formaldehyde, dyes, rubber goods and leather tanning.
- (6) In the manufacture of liniments and other medical preparations.
- (7) As a substitute for methylated spirits for the use of spirit lamps and stoves.

2. *Methyl Acetone*.—This is used:—

- (1) As a solvent in the manufacture of paint and varnish removers.
- (2) As a tanning agent.
- (3) In the manufacture of artificial amber, celluloid and gas mantles.
- (4) In dyes, varnish, lacquer, enamel and paint industries.

*Denaturing grade methanol*.—This is generally used:—

- (1) As a denaturant of Ethyl or grain alcohol in the manufacture of methylated spirits.
- (2) As a substitute for methylated spirits for the use of spirit lamps and stoves.

*Neutral oil*.—This can be used:—

- (1) In the manufacture of chemically pure creosote.
- (2) As a disinfectant.

*Mysore wood preservative*.—This can be used for treating railway sleepers and mine and structural timbers to increase their life and wear.

*Black paint*.—It is suitable for painting timber and structural steel. It dries with a clear black gloss with the appearance and finish of high grade Japan.



*Wood tar pitch.*—This can be used:—

- (1) For coating timbers used in country dwellings and wooden posts used in fencing or electric and telegraph systems.
- (2) For boats, a water-proof paint.
- (3) For road dressing and briquette manufacture.

*Kreso (disinfectant).*—This can be used in Hospitals, Municipalities, Railways, Mills and by General Public.

9. (b) Yes. Acetate of lime is used in the manufacture of acetone (which is necessary for the manufacture of explosives). The Cordite Factory at Aruvankadu use about 300 tons of this product during peace times.

10. No. The fuel consumption will be a little higher during the monsoon months and the output slightly lower.

11. Standard process prevailing in United States of America.

12. *Pig iron.*—Iron ore, limestone, and charcoal.

*Wood distillation products.*—Jungle wood, High calcium limestone.

*Cast iron pipes.*—Pig iron, lime and coke.

(Approximate.)

	Tons.
13. Iron ore . . . . .	46,000
Wood (both carbonising and fuel) . . . . .	5,000
Coke . . . . .	1,500

14. *Per ton of iron—*

	Ton.
Iron ore . . . . .	1.65
Wood including fuel under boilers and retorts . . . . .	4.50
Limestone . . . . .	0.25

*Wood distillation products per ton of wood carbonised—*

Acetate of lime . . . . .	52 lbs.
Methyl alcohol . . . . .	2 gals.
Settled tar . . . . .	7 "

	Ton.
<i>Raw limestone per ton of acetate</i> . . . . .	.75
Burnt lime . . . . .	.60
Coke per ton of metal melted for pipe manufacture, including losses, etc. . . . .	1.5

15. All raw materials except coke are obtained within a maximum radius of 30 miles from the Works. The average lead on our tramways is at present about 20 miles. Coke is being obtained from Bengal.

16. *Coke for the Pipe Foundry.*

*For coke.*—Rs. 13 0 0 f.o.r. collieries.

24 11 9

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37 11 9

17. *Bengal collieries.*

18. (a) Practically all our raw materials are carried on our own tramway system. High calcium limestone about 1,500 tons are carried on the Madras and Southern-Mahratta Railway system and they have given a special freight, Rs. 1-13-6 a ton.

(b) We are at a very great disadvantage in respect of the freight on coal and coke.

(c) The freight on coal and coke ought to be reduced in the interests of the development of the country even if the railways as a whole suffer some loss on that account.

19. Yes.

(a) Nil.

(b) Yes

22. None.

23. The Works is technical and specialised. When the plant started operation, foreign skilled labour was imported for all important places on a two-year contract and at one time we had about 14 such officers. Within six months after the start a system of recruiting apprentices and training them for the various jobs was adopted. The best Engineering graduates and chemists were recruited and given systematic training. Within about three years all the foreign staff have been gradually replaced by the local apprentices trained by them. Occasionally we may have to obtain foreign experts to advise us or trained operators for new developments.

24. None at present.

(c) The works have a regular scheme for the training of apprentices. According to requirements, each year about half a dozen graduates in Mechanical or Electrical Engineering or Chemistry and a dozen students who have passed out of Mechanical Engineering School are being trained in the several departments of the Works in accordance with a programme.

26. Including cost of passage to and fro, the total expenditure on a short-term contract generally works out to twice the salary they would ordinarily draw in their home country.

	Rs.
27. (a) Direct by the Works . . . . .	1,500
Through the Works Contractors . . . . .	3,500
	5,000
	Total . . . . .

(b) Unskilled labour.	Per day.
Men . . . . .	Rs. 0 10 0 to 0 12 0
Women . . . . .	,, 0 7 0 to 0 10 0
Skilled labour . . . . .	,, 0 14 0 to 3 0 0
General average . . . . .	Rs. 0 13 0

	Rs.
28. 1923-24 . . . . .	3,11,628
1924-25 . . . . .	3,22,198
1925-26 . . . . .	2,53,281
1926-27 . . . . .	2,61,068
1927-28 . . . . .	2,68,013

N.B.—This relates only to the factory and not the labour employed at mines, tramways and forest.

29. (a) Yes.

(b) Principally from within the State.

30. (a) Yes. Decidedly. Unfortunately, however, there exist no facilities to give him a proper training either as a student or as adult.

(b) Judging from the experience gained during the last five years we can say that the Indian labour properly trained and with experience will, having regard to climatic conditions, do 3rd of the work done by his confrere in Europe.

31. A small town on up-to-date sanitary principles has been built and provided with efficient water supply. A dispensary is located in the town. There is a co-operative society (stores and banking) formed by the staff of the Works. There is a school for children with extensive playgrounds. A club and a social union provide for the recreation of the employees. The accommodation for the staff is inadequate but new houses will be gradually built.

32. (a) Steam and electric power generated with steam.

(b) Jungle wood, wood tar and blast furnace gas.

Yes, for the present requirements.

33. About 50 tons a day in addition to blast furnace gas and selula tar. Total average steam raised about 23,000 lbs.

34. (a) Billets Rs. 3-8-0 per ton at railhead.

(b) Rs. 5-8-0 per ton delivered at the Works.

This includes cost of transport on our tramways and all handling charges at wood yard including splitting wherever necessary.

35. (a) With steam power.

Cost per K. W. N. 1-16 anna including proportionate supervision and other charges.

(b) The rate is very high.

(c) 85 K. W. N. per ton of iron produced.

36. Products manufactured on our Works are not manufactured elsewhere in India.

37. Charcoal iron as such . . . Very little at present.

Pig iron whether charcoal or coke . . . . .	100,000 tons.
Acetate of lime . . . . .	400 "
Alcohol . . . . .	10,000 gals.

38. Yes in time. The period is however difficult to forecast as it depends to a large extent on general industrial revival and the support the Works receive from the Government of India which controls the biggest and the most prosperous industry in India to-day, viz., Railway transport. The main products of Bhadravati are really intermediate products which other industries making finished products can profitably use. The manufacture of high grade quality castings; dyes and formaldehyde for the cotton industry, rubber, celluloid and artificial silk must be taken up in India sooner or later if she has to prosper when our products will supply the basic needs. The Works are also investigating the possibilities of the manufacture of finished steel, tool and other special steel and acetic acid.

A plant is being put up at Kirloskarvadi for the manufacture of formaldehyde from the Bhadravati methanol. The Petlad Dye Works are taking increasing quantities of our acetate of lime.

39. Bye-products are mainly exported—

	Miles.
Distance Madras . . . . .	381
Distance Marmugao . . . . .	331
Pig iron important local markets—	
	Miles.
Kirloskarvadi . . . . .	325
Satara . . . . .	455
Bombay . . . . .	642
Ahmedabad . . . . .	944
Madras . . . . .	381
Hyderabad . . . . .	602
Rangoon . . . . .	By sea, <i>via</i> Madras.

40. (a) A small bit of territory comprising portions of the Southern-Mahratta country, Mysore and Hyderabad States.

(b) There are very few industries in this area and the demand for pig iron is limited to about 2,500 tons a year. This area is likely to absorb our entire output of pipes provided we are not undersold.

41. Our problem is the reverse of this. We should look forward to developing a home market for all our products. At present our exports are to the following countries:—

*Pig iron.*—America, Europe and Japan.

*Acetate.*—Japan and Australia.

*Methanol and other products.*—England and Japan.

42. (a) Yes.

*In India—*

*Pig iron and pipes.*—By State Railways, P. W. D. and other Government Workshops, Municipalities, etc.

*Acetate of lime.*—Cordite Factory, Aruvankadu.

(b) (i) Our plant came into operation only in 1923 January.

(ii)

Product.	Year.	INDIAN STORES DEPARTMENT.		RAILWAYS.		MUNICIPALITIES.	
		Tons.	Rate.	Tons.	Rate.	Tons.	Rate.
			Rs.		Rs.		Rs.
Pig iron . . . . .	1923	...	...	148	82 0 0	...	...
Do. . . . .	1924	...	...	1,192	66 4 0	...	...
Do. . . . .	1925	67	67	2,427	61 4 0	40	75 0 0
Do. . . . .	1926	...	...	2,888	57 0 0	200	68 12 0
Do. . . . .	1927	99	67	2,368	56 0 0	63	68 8 0
				Mysore Government			
				Tons.	Rs.		
Pipes . . . . .	1927	...	...	2,785	150 6 0	...	...
Acetate of lime . . . . .	1927-28	...	...	393	2 0 0	...	...

(c) Our plant had not started operation during the war.

43. France and Belgium for our pipes. In regard to pig iron no country will be able to undersell the iron in the local market but the selling rate is determined by the rate at which foreign countries will be able to dispose of their surplus stock.

44. Raw materials are considerably cheaper. Repairs and replacements cost more as the material has to be wholly imported. Technical advice also costs more.

45. Our processes are the same as in United States of America.

46. (i) Very little foreign iron is imported. The material is mostly for special purposes and the price is generally higher than the local product. Recently Messrs. Stanton Iron Works have sold 52 tons of 9" and 5" pipes at Rs. 6-8-6 a cwt. free delivery western wharf, Karachi.

(ii)

—	1923.	1924.	1925.	1926.	1927.	1928 (6 months).
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Pig iron . . . Tons.	90	65	46	47	49	49
Acetate . . . "	185	167	117	138	136	136
C. F. methanol . Gals.	...	...	...	1 8 0	0 14 0	0 12 0
Methyl acetone . "	...	...	...	...	1 8 0	1 8 0
Denaturing grade . "	...	...	...	...	1 2 0	1 2 0
C. I. pipes . . . Tons.	...	...	...	173	178	157
Refined tar . . . "	...	...	...	68	61	51

47. (a) For pig iron and pipes.—From private enquiries in Bombay, Calcutta and Madras.

48. (a) Yes. The Three iron companies on the Bengal side, it is learnt, have formed into a combine and have an understanding in regard to the quota of sales and selling rates of pig iron.

(c) The Indian Iron and Steel Company is dumping their pig iron at very low rates in our territory taking advantage of high prices realised by them in their own area. This is possible as there is perfect understanding between the three companies and, it is said, foreign importers. Formerly they used to have an understanding only in regard to rates but not in regard to quota of sales when our chances were not so bad as at present. A statement is also enclosed showing the prices quoted by the foreign firms for delivery at Indian ports for cast iron pipes.

49. According to the information gathered by our officers during their tour in Europe recently, the selling prices in India leave them very little margin over their actual cost of manufacture. Moreover, it is believed that hot metal from Blast furnace is used extensively in Europe for pipe making and the cost of remelting in a cupola is saved.

50. (a) No.

51. For pig iron and pipes.—Madras, Bombay, Karachi and towns within easy reach of them.

52. (a) Yes in the general world level of prices.

(b) (1) In the case of iron and steel the demand has not grown as rapidly as before the war and the total demand is short of the capacity of the plants.

(2) In the case of pig iron specially the demand is very low compared even with the present output of steel.

(3) In the case of our bye-products the development of synthetic processes for the manufacture of acetone and pure methanol are responsible for the reduced prices.

(c) The forces that have contributed to reduce the general level of prices in the Iron and Steel industry are believed by some to be temporary but it is feared that the re-adjustment will take under normal circumstances a long time.

53. Accurate information is not available in regard to sea freight which it is understood varies considerably as, some times pig iron is carried as ballast at nominal rates.

55. (a) Yes, the capital outlay is greater as practically all the machinery has to be imported from abroad. Extra cost 15 to 20 per cent.

(b) Expert advice and labour whenever necessary will cost more. In this we have to consider the cost of local men deputed to visit plants in foreign countries or study special problems. Our expenditure in these directions is about Rs. 20,000 a year.

(c) Taking both wages and efficiency into consideration, the labour at Bhadravati costs less.

(d) No.

(e) No.

(f) We have no information about the railway rates in other countries on similar products but the conditions are not the same. India has very little sea board and fewer ports. River and other cheap inland transport is singularly lacking. The railways though practically State property is cut into a number of systems and even when telescopic rates do exist, they do not apply to all the systems. If India has to be industrially efficient, the classification and railway rates have to be revised so as to afford the largest amount of assistance to local industries at some temporary sacrifice to Government. This will be of considerable indirect benefit to the country and will in the long run help to increase the revenue of Indian Government also.

(g) Yes. The Bhadravati Works have to carry spares worth about Rs. 2 lakhs.

(i) Yes. Indian capital is bound to be shy until there is a general revival of trade and industry or people are assured of more and steady support from the Government of India in all possible directions.

56. A vigorous attempt with a clear cut policy to establish new industries and develop the country can reduce the period during which we will have to depend upon outside material and skill. If progress is as slow as at present, the disadvantages will be more or less permanent.

57. (a) So far as our wood distillation products are concerned there are none. For pig iron and pipes, yes.

(b) The Indian Iron and Steel Company and the Bengal Iron Company have been our serious competitors even within the area to which we have favourable freight rates. They are selling their products at fairly good rate in the north where there is a good demand and have been lowering the prices in the south. In this connection, we enclose a copy of a letter recently addressed by the Works to the Railway Board which explain the situation clearly.

58. The three iron companies of the North have an understanding in respect of sales and rates. There has been no attempt at our Works joining them, for—

(1) our product is charcoal pig iron,

(2) we are too far from them, about 4 days for post to travel, and

(3) our output is comparatively very small.

59. (a) Yes. Ours is one of the biggest units for this class of industry.

(b) Charcoal furnaces and wood distillation plants have been economically run on a capacity of 20 tons of charcoal and 20 tons of iron a day in Sweden.

60. Yes.

61. 77.28 per cent. including cost of erection.

62. A copy of our pamphlet is enclosed. A detailed description is available in a paper read by one of our Construction Engineers before the Mysore Engineering Association (copy is enclosed).

63. Yes. But very soon we may have to replace a portion of machinery in the Chemical Plant and instal a plant for the recovery of acetic acid direct by a new process recently developed by Professor Suida of Vienna. Two plants are in operation, one in Czechoslovakia and the other in France.

A pilot plant has recently been erected in America and the process is being watched.

- 64. (1) Alcohol Refinery.
- (2) Tar Distillation.
- (3) Pipe Foundry.

The objects were to make finished articles for which there is a ready demand and to improve the revenue prospects of the undertaking. The expectations have been largely realised except in the case of the pipe foundry where the market rate has dropped very low since the plant was erected.

- 65. None.
- (b) Rs. 288 lakhs.
- (c) Rs. 1239 lakhs.
- (d) Rs. 1527 lakhs.
- Rs. 14999 lakhs.
- (e) Rs. 2945 lakhs.

Total Rs. 19471 lakhs.

67. Represents actual cost. We could set apart only last year for the first time a small sum of Rs. 1,10,445 against depreciation fund.

68. Less than the sum to be set aside.

69. Both about Rs. 1 crore. Only 50 per cent.

(a) & (b) A copy of a note on the Writing Down the capital value of the plant is enclosed herewith which explains the position clearly.

There may not be an appreciable difference.

74. None.

75. About Rs. 1 crore including the development of hydro-electric power at Jog, the installation of a paper mill for the manufacture of paper from bamboo and a steel plant together with a rolling mill.

(a) Works costs.

76. Forms appended.

77. The unit cost was high in 1927-28 as the output of pig iron was comparatively low for the following reasons:—

- (1) Trial of low Phosphorus titaniferous ore which upset the working of the furnace for more than a month.
- (2) Wearing out of the lining and irregular working.
- (3) The furnace was blown out a few days before the close of the year.

All items except cost of raw materials were affected by them. If the output in 1927-28 were as good as in the previous year, the gross and nett cost would be as follows:—

	Rs.
Gross cost . . . . .	6298
Nett cost . . . . .	4506

78. Yes, to a small extent. The charcoal consumption in the furnace was higher than normal and also cost of repairs and renewals at Blast Furnace.

(a) & (b) An estimate for 1929-30 is enclosed herewith.

79. Yes.

80. No.

(b) Overhead charges.

81. A statement is attached. This has been empirically fixed on the basis of experience gained.

(i) *Depreciation.*

82. (b) About 3 per cent. on the present value of the plant, allowed to accumulate at compound interest. Except the retorts and the charcoal buggies, the rest of the plant has a long life. About 2 per cent. of our outlay is on tramway track and rolling stock. Even 3 per cent. of the present capital value allowed to accumulate at 4 per cent. interest will attain the value in about 20 years. Practically the whole plant has a very much longer life.

(ii) *Working capital.*

83. Rs. 20 lakhs when sales are brisk otherwise Rs. 30 lakhs.

84. Financed by Government.

85. 15 months.

86. 22·5 months.

87. Year ended 30th June.

	Rs.
1923 . . . . .	3·65 lakhs.
1924 . . . . .	9·66 "
1925 . . . . .	11·89 "
1926 . . . . .	13·30 "
1927 . . . . .	16·70 "
1928 . . . . .	19·71 "

88. On account of the monsoon weather it is necessary to hold a large stock of raw materials about the end of May before South West monsoon breaks. Wood also requires to be seasoned.

89. The head office is at the Works at Bhadravati.

No.

90. (i) Included in the cost. Very small to be separated.

(ii) No.

92. The object of the Mysore Government in starting these works was, to establish a very important industry which would be the first step in the industrial development of the country, to train young people for modern industrial work and to familiarise the people of the State with industrial conditions. In this view, a return of 5 per cent. on the present value of the plant should now be considered fair.

93. Yes, generally as will be explained below:—

(a) *Raw materials.*—We have an abundant supply of iron ore on the Kemmangundi hills ranging about 60 per cent. iron. Even within workable distance of the present ropeway, we have ore that will last at the present rate for over 100 years. But there are other sources of supply which has ore in abundance.

The forests are worked on a coppice with standard system with a rotation of 25 to 30 years. Out of 700 square miles of forest area that can serve the Bhadravati Works, only 350 square miles have been, in the first instance, allotted. About 60 miles of tramways have been laid in the forests and cheap transport to the railhead is attempted by charcoal lorries. The main metre-gauge line from Birur to Shimoga is being gradually extended and will run through a portion of the forest region included in the 700 square miles. No difficulty is apprehended in maintaining present supplies of wood.

Mysore has no coal and is very distant from the important coal fields of Bengal. A small supply of wood is available but increased power requirements will have to be met by harnessing the Sharavati Falls about 76 miles from the Works. These are one of the biggest water falls in the world and at the place selected for the generating steam there is a fall of about 1,250 feet available, and power can be raised cheap. Rough calculations show that the electric scheme will pay if power is taken at 100 rupees a H. P. a year.



No trouble has been experienced in regard to the recruitment of skilled or unskilled labour. The Board of Management have introduced a system of training apprentices of two grades which has worked very well.

The Bhadravati works are the only one producing a high grade iron and wood distillation products in India and the only one in Southern India producing any kind of iron. At present the market in Southern and Central India cannot absorb our output but there is a steady and growing demand for finished cast iron and steel articles.

(b) In the present condition of the world demand for pig iron, it will be almost impossible to obtain new capital for further development unless substantial protection is assured for a sufficiently long time, i.e., till there is a net work of new industries making highly finished articles for which there is a good demand in the country.

(c) Yes. We have cheap and abundant raw materials and labour is comparatively cheap. In time, they can be trained to be efficient also. Educated mechanics and Engineers can with proper training adapt themselves to the exacting work of a factory. Besides, India is a vast country and a good demand for all kinds of iron and steel articles is bound to develop with the expansion of the activities in all directions.

We are at present manufacturing charcoal pig iron, and wood distillation products at rates which are probably the lowest in the world.

94. (a) Yes, but we have enlarged our plant very near the maximum capacity of similar plants. There are very few plants of a larger capacity than ours even in America. Ours is the biggest plant for this industry in the East and even in the British Empire.

(b) Yes.

95. Yes. Practically the entire output of the Works will be taken up in the manufacture of ordnance material during the time of war.

96. The manufacture of iron and steel was a very common village industry even so late as 25 years ago in this part of the country. Even now remains of slag, the vestiges of iron and steel manufacture can be seen in many places within 20 miles radius of Bhadravati.

97. Under normal circumstances we would have advocated a real protective duty for pig iron and all castings including pipes. But this is likely to increase the internal competition against us. Beaten by the increased duties in the area favourable to them, the Indian and Bengal Companies will be in a position to still further reduce the selling rates in areas favourable to us.

We would therefore urge the retention of the present duties and the grant of a suitable bounty to us. Should there be any difficulty in adopting this suggestion we would suggest that the Government of India should indirectly help us by:—

- (1) Guaranteeing to buy about 15,000 tons of our pig iron a year for their Railway and other workshops for a period of about 5 to 7 years so as to give us the same nett rate as their purchases for the East Indian Railway from the Bengal companies will secure the latter. In any case the minimum price should be fixed at Rs. 60.

*N.B.*—In the latest year it ranged from Rs. 61 to Rs. 64.

- (2) The sale to be at our option depending upon the quantity remaining unused for new developments, etc.
- (3) They should make all the acetone they require locally and not import the cheap synthetic acetone and pay for our acetate of lime a price equivalent to the domestic price of acetate in America.
- (4) By revising the formula for denaturing spirits so as to make methanol compulsory. This is so in England and America.

98. (a) *Pig Iron*.—10 per cent. *ad valorem* with part valuation Rs. 75 or a duty of Rs. 7-5-0.

*Pipes*.—10 per cent. *ad valorem* works out to Rs. 10 a ton or even less in information not available, but it is believed that the total charges will amount to about Rs. 20 a ton.

99. We would advocate the retention of the existing duties (*vide* answer to previous question).

100. (1) We should be assured of a substantial share of the orders for pig iron requirements of the various railway and Government workshops. In this connection a copy of our letter addressed to the Railway Board enclosed herewith gives complete information. (Also *vide* reply to question 98).

(2) Rates for railway transport on our finished products, coal, coke and construction materials should be revised and telescopic rates applied on all the Railway systems of India.

(3) The Railways should investigate the possibility of using chilled wagon wheels, axle boxes and similar articles made from charcoal pig iron. If the Works are assured of a regular custom, the necessary equipment can be installed.

(4) Methanol as the principal ingredient for denaturing spirits should be re-introduced by the Government of India and the percentage increased as in America.

#### FORM I.

Statement showing the aggregate expenditure incurred at the works on the total output of our factory for each of the last three years.

(See Question No. 76.)

	YEAR.		
	1925-26.	1926-27.	1927-28.
	Rs.	Rs.	Rs.
1. Raw material including transport.	8,06,750	7,79,495	7,51,937
2. Production labour (salaries of staff)	1,98,845	1,90,131	1,81,833
3. Power and Fuel-wood under Boilers and Locomotives Coal and Tar.	*1,03,477 64,488	*96,759 45,811	1,12,054 47,594
4. Ordinary current repairs and maintenance of buildings, plant and machinery.	1,24,963	1,48,765	99,795
5. General services, supervision and local office charges.†	2,00,810	1,83,658	1,83,837
6. Miscellaneous supplies (oil, waste, grease, etc)	23,872	25,411	34,314
7. Miscellaneous credits (proportion of main plant charges such as overhead and general charges, value of steam power and water debitable to the subsidiary plants).	-61,099	-1,15,143	-1,56,172
<b>TOTAL</b>	<b>13,58,629</b>	<b>13,58,128</b>	<b>11,43,128</b>

\* Included under raw materials.

† Includes also charges of the Town, Hospital, Laboratory, Drawing Office, Watch and Ward, etc.

## FORM II.

Statement showing the works cost per unit of each finished product for each of the last three years.

(See Question No. 76.)

Products.	YEAR.		
	1925-26.	1926-27.	1927-28.
Output of pig iron . . . . . Tons.	17,891	20,055	17,169
<b>PER TON OF IRON.</b>			
1. Raw materials . . . . .	45.09	38.66	43.79
2. Works labour . . . . .	11.12	9.48	10.59
3. Power and fuel . . . . .	3.60	2.28	2.77
4. Ordinary current repairs and maintenance of buildings, plant and machinery.	6.99	7.42	8.81
5. General services, supervision and local office charges	11.22	9.17	10.71
6. Miscellaneous stores and supplies . . . . .	1.33	1.26	2.00
7. Miscellaneous credits (proportion of main plant charges, such as overhead and general charges, value of steam, power and water debitable to the subsidiary plants).	-3.41	-5.74	-8.09
<b>TOTAL</b> .	75.94	62.73	66.58
Credit for wood distillation products obtained at average rates realised during the years.	13.90	17.40	20.91
<b>NET TOTAL</b> .	62.04	45.33	45.64

Statement showing percentage of distribution of overhead and general charges for the purposes of cost sheets.

	Yard. Switching.	Steam.	Electri- city.	Water.	Retorts.	Chemical housg.	Tar plant.	Alcohol plant.	Furnace.	Pipe Foundry.	TOTAL.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Overhead charges and general expenses.	5	5	5	5	20	20	5	5	20	10	100
Mechanical Engineering . . .	5	5	5	5	20	20	5	5	20	10	100
Civil Engineering . . . . .	5	5	5	5	20	20	5	5	20	10	100
Yard Switching . . . . .	...	12½	...	...	60	2½	...	...	22½	2½	100
Steam . . . . .	}	Actual consumption.									
Electricity . . . . .											
Water . . . . .											

## Foreign Tenders for Pipes.

*Bellary and Municipal Contracts, 1924—*

Messrs. Arbraives, France—Per cwt. Rs. 9 f.o.r. Bellary.

Messrs. Cochrane, London—Per cwt. Rs. 11 f.o.r. Bellary.

*Tuticorin, 1927—*

Messrs. Pont-a-Mouson—Per cwt. Rs. 7 f.o.r. Bellary.

*Madras Corporation, 1927—*

Messrs. Pont-a-Mouson—Per cwt. 7 f.o.r. Bellary.

*Karachi Port Trust, 1928—*

Messrs. Stanton &amp; Co.—Per cwt. Rs. 6-8-6 c.i.f. Karachi.

*Hyderabad State, 1928—*

Messrs. Robert Maclaren, Glasgow—Per cwt. Rs. 8-8-0 f.o.r. Hyderabad or Rs. 6-8-0 c.i.f. Bombay.

*Estimated Costs and Production of the Main Plant for the year 1929-30.*

Pig Iron Production 75 tons a day or 27,000 tons per annum.

## I.—Administration—

	For the month.		For the year.	
	Rs.	Rs.	Rs.	Rs.
Salaries . . . . .	1,700		20,400	
Bombay Office . . . . .	600		7,200	
Directors' Fees and Travelling allowance . . . . .	1,200		14,400	
Government charges . . . . .	800		9,600	
Miscellaneous . . . . .	150		1,800	
		4,450		53,400

## II.—Management—

Salaries . . . . .	1,500		18,000	
Hospital (salaries) . . . . .	550		6,600	
Hospital (supplies) . . . . .	200		2,400	
Provision for Library . . . . .	150		1,800	
Technical consultation fees . . . . .	1,000		12,000	
Stationery and Printing . . . . .	400		4,800	
Leave Fund . . . . .	1,600		19,200	
Postage and telegrams . . . . .	250		3,000	
Travelling expenses . . . . .	100		1,200	
Accident Pay . . . . .	50		600	
Petty Repairs . . . . .	100		1,200	
Watch and Ward . . . . .	400		4,800	
		6,300		75,600

## Laboratory—

Salaries . . . . .	1,500		18,000	
Supplies . . . . .	450		5,400	
		1,950		23,400

Town—	For the month.		For the year.	
	Rs.	Rs.	Rs.	Rs.
Town and Sanitation . . . . .	500		6,000	
Repairs to Roads and Buildings . . . . .	500		6,000	
Guests' entertainment charges . . . . .	150		1,600	
Miscellaneous . . . . .	450		5,400	
	<u>          </u>	1,600	<u>          </u>	19,200
<b>3. Sales and Purchased—</b>				
Half of shipping . . . . .	450		1,800	
Stores . . . . .	450		5,400	
Purchases . . . . .	60		720	
	<u>          </u>	660	<u>          </u>	7,920
Accounts . . . . .		2,100		25,200
<b>III.—Factory—</b>				
Supervision . . . . .		1,600		19,200
<b>5. Blast Furnace—</b>				
Salaries . . . . .	1,400		16,800	
Wages . . . . .	3,500		42,000	
Relining Fund . . . . .	1,150		13,800	
Stores and supplies . . . . .	500		6,000	
Repairs and Renewals . . . . .	500		6,000	
	<u>          </u>	7,050	<u>          </u>	84,600
<b>6. Retorts—</b>				
Salaries . . . . .	800		9,600	
Wages . . . . .	1,700		20,400	
Stores and supplies . . . . .	300		3,600	
Repairs and Renewals . . . . .	1,500		18,000	
	<u>          </u>	4,300	<u>          </u>	51,600
<b>7. Chemical Plant—</b>				
Salaries . . . . .	1,000		12,000	
Wages . . . . .	2,500		30,000	
Stores and supplies . . . . .	600		7,200	
Repairs and Renewals . . . . .	400		4,800	
Lime . . . . .	3,000		36,000	
	<u>          </u>	7,500	<u>          </u>	90,000
<b>8. Electricity and Water—</b>				
Salaries . . . . .	1,600		19,200	
Wages . . . . .	1,100		13,200	
Stores and supplies . . . . .	400		4,800	
Repairs and Renewals . . . . .	200		2,400	
	<u>          </u>	3,300	<u>          </u>	39,600
		<u>40,810</u>		<u>4,89,720</u>



	For the month.		For the year.	
	Rs.	Rs.	Rs.	Rs.
<b>Proportionate charges of the Main plant debitable to the subsidiary Plants—</b>				
Overhead and General charges			75,000	
Steam . . . . .			40,000	
Electricity . . . . .			11,000	
Water . . . . .			4,000	
Yard Switching . . . . .			4,000	
			<hr/>	1,34,000
Special repairs . . . . .				13,41,940
<i>Credits from the Charcoal Plant .</i>				<hr/> 50,000
				<hr/> 13,91,940
Acetate, 170 tons . . . . .	23,800			
Alcohol, 18,500 gal'ons . . . . .	9,250			
Tar (Set), 160 tons . . . . .	6,400			
Tar (Sol), 120 tons . . . . .	1,700			
Neutral Oil, 450 gallons . . . . .	225			
	<hr/>	41,375	4,96,500	
Charcoal Braize, etc. . . . .	...	...	3,500	
			<hr/>	5,00,000
				<hr/> 8,91,940
				<hr/>
			Rs.	
Gross cost per ton of Iron . . . . .			51'55	
Nett cost per ton of Iron . . . . .			33'03	

Assuming provision for depreciation on the plant at Rs. 2,70,000 per annum the gross and nett cost will be:—  
Rs. 61'55 and Rs. 43'03 respectively.

(4) *Correspondence regarding the quality of charcoal pig iron.*

*Extract from Messrs. Perin and Marshall's letter, dated 25th March, 1928.*

"We might add that the iron is generally liked, and that all of the consumers could have given as frank a statement as that received from the Sessions Foundry Company."

*Letter dated 26th February, 1927, from Brooklyn Vault Light Company, New York, to Rogers Brown and Crooker Bros., 21 E., 40th Street, New York.*

In reply to your letter of the 19th instant, relative to Mysore Charcoal Pig Iron, we are pleased to state that we find some entirely satisfactory for the purpose which we use it, which is in enrichening our mixture of regular 2 Foundry Pig Iron. A few pieces of charcoal iron in each charge we have found results in getting clean soft castings.



*Copy of a letter dated 23rd February, 1927, from The Bullard Machine Tool Company, to Rogers Brown and Crooker Bros., Inc., 21 E., 40th Street, New York.*

Answering your letter February 19th would advise that the Mysore Charcoal Iron we have found to compare very favourably with our well known American Charcoal Iron.

*Copy of a letter dated 25th February, 1927, from Pratt and Whitney Company, Hartford, Conn., to Rogers Brown and Crooker Bros., Inc., New York.*

Replying to yours of the 19th in regard to Mysore Charcoal Pig Iron:—  
Wish to advise that we have no outstanding statement to make in regard to this Iron. It has served us equally as well as the Lake Superior Charcoal Irons and has the advantage of being a lower priced iron.

The above statement summarises the entire matter as we see it.

*Copy of a letter dated 21st February, 1927, from The Sessions Foundry Company, Bristol, Conn., to Rogers Brown and Crooker Bros., Inc., 21 E., 40th Street, New York.*

*Att. George A. Crocker, Jr. V. P.*

We have your favour of the 19th with reference to our experience with the Mysore Indian Charcoal Pig Iron. In reply we are pleased to advise that we have found this iron very satisfactory for several different purposes.

In the first place, we have found it an advantage for use in mixtures requiring great strength. We have also been successful in the use of it in heat resisting mixture, as well as semi-steel mixtures, and the fact that we are able to obtain this iron with a high manganese content, has been a distinct advantage especially in mixtures using steel.

By the use of the Mysore Iron in one of our special mixtures, we have been able to obtain higher tensile and transverse strength tests than from any other mixture previously used.

Trusting the above information may be of interest.

(5) *Statements handed on the 12th November, 1928.*

(i) ESTIMATE FOR THE MANUFACTURE OF 25,000 TONS OF ROLLED STEEL PER ANNUM.

Cost per ton of Finished Steel.	Rs.
Pig Iron, 1.1 tons . . . . .	38.5
Other materials . . . . .	5.0
Power 600 K. W. at $\frac{1}{4}$ anna . . . . .	9.5
Refractories and Electrodes . . . . .	5.0
Repairs . . . . .	10.0
Wages and Supervision . . . . .	5.0
Miscellaneous . . . . .	2.0
Rolling (Demag's); estimate . . . . .	15.0
TOTAL . . . . .	90.0

## Works Cost.

## Depreciation and Interest.

	Lakhs of Rs.
Depreciation--	
Main Plant . . . . .	3.0
Steel Plant . . . . .	1.0
Pipe Foundry . . . . .	1.0
Interest--	
Main Plant . . . . .	5.0
Steel Plant . . . . .	1.25
Pipe Foundry . . . . .	1.25
TOTAL	12.5
Per ton	50
GRAND TOTAL	140

NOTE.—If we make sponge iron and increase the output of steel to 60,000 tons a year, the depreciation and interest will be reduced to Rs. 25 a ton whereas the Works cost will remain the same. It may even be reduced to some extent. Then the total cost will be Rs. 115 a ton, or less.

## (ii) ESTIMATE FOR 1929-30.

	Rs.	Rs.	Rs.	Rs.
		Cost per ton.		
Ore and Flux . . . . .	1,41,120	5.22		
Carbonising wood . . . . .	3,97,080	14.70		
Extraneous fuel . . . . .	1,55,520	5.76		
Transport . . . . .	1,69,560	5.27		
Fuel and Coal for Loco- motives . . . . .	26,400	1.00		
Lime . . . . .	36,000	1.33		
		34.28		
Salaries and Wages . . . . .	3,43,200			12.70
Repairs and Renewals . . . . .	1,03,800			3.84
Stores and Supplies . . . . .	51,800			1.90
Miscellaneous . . . . .	91,800			3.40
	15,15,780			56.12
Alcohol Refinery—				
Salaries and Wages . . . . .	2,700	.10		
Stores and Supplies . . . . .	8,400	.31		
Repairs and Renewals . . . . .	1,000	.04		
	12,100			.45
Tar Plant—				
Salaries and Wages . . . . .	9,000	.33		
Wood coal and Supplies . . . . .	2,700	.10		
Repairs and Renewals . . . . .	1,000	.04		
	12,700			.47

## (ii) ESTIMATE FOR 1929-30—contd.

	Rs.		Cost per ton.	
	Rs.	Rs.	Rs.	Rs.
<b>Pipe Foundry—</b>				
Salaries and Wages . . . . .	85,000		3.15	
Sand, Plumbago, Paint, Fuel and other materials . . . . .	74,600		2.76	
Coke 1,200 tons at Rs. 37 . . . . .	44,400		1.65	
Repairs and Renewals and Mis- cellaneous stores . . . . .	50,000		1.89	
		<u>2,54,000</u>		<u>9.45</u>
<b>GRAND TOTAL . . . . .</b>		<u>17,94,580</u>		<u>66.50</u>

## (iii) CREDITS.

	Rs.		Cost per ton.	
	Rs.	Rs.	Rs.	Rs.
Acetate, 2,040 tons at Rs. 140 . . . . .	2,85,600		15.77	
Methyl Acetone, 30,000 Imp. Gals. at Rs. 1-4-0 . . . . .	37,500		1.38	
Denaturing Grade, 75,000 Imp. Gals. at Rs. 1-0-0 . . . . .	75,000		2.77	
C. P. Methanol, 75,000 Imp. Gals. at Rs. 0-14-0 . . . . .	65,625		2.43	6.58
Creosote for treating plant, 100,000 Gals. at Rs. 0-10-0 . . . . .	62,500		2.31	
Black Paint, 30,000 Gals. at Rs. 1-0-0 . . . . .	30,000		1.11	
Kresol, 30,000 Gals. at Rs. 1-0-0 . . . . .	30,000		1.11	
Pitch, 500 tons at Rs. 30 . . . . .	15,000		.55	
Pipes, 4,500 tons at Rs. 120 a ton . . . . .	5,40,000		20.00	5.08
Irrigation Pipes, 1,000 tons at Rs. 75 a ton . . . . .	75,000		2.77	22.77
<b>TOTAL . . . . .</b>	<u>12,16,225</u>			

or say Rs. 12 lakhs.

Net Cost of Pig Iron—21,000 Tons=Rs. 5,78,355 or Rs. 27.5 per ton.

## (iv) ACTUALS FOR JANUARY 1928 (OUTPUT OF PIG IRON—1,534 TONS).

	Rs.		Cost per ton.	
	Rs.	Rs.	Rs.	Rs.
Ore and Flux . . . . .	11,209		7.30	
Carbonising Wood . . . . .	3,25,638		23.23	
Extraneous fuel . . . . .	15,654		12.04	
Transport . . . . .	Included above.		Included above.	
Fuel and coal for loco- motives . . . . .	1,327		.90	
Lime . . . . .	2,195		1.43	
				44.90

## (iv) ACTUALS FOR JANUARY 1928 (OUTPUT OF PIG IRON—1,584 TONS)—contd.

	Cost per ton.				
	Rs.	Rs.	Rs.	Rs.	Rs.
Salaries and Wages . . . . .	24,068			15.66	
Repairs and Renewals . . . . .	2,473		1.55		
Stores and Supplies . . . . .	5,822		3.72		
Miscellaneous . . . . .	4,424		2.80	2.24	
		392,810		68.80	68.90
<b>Alcohol Refinery—</b>					
Salaries and Wages . . . . .	293				
Stores and Supplies . . . . .	250				
Repairs and Renewals . . . . .	18			.43	.43
		561			
<b>Tar Plant—</b>					
Salaries and Wages . . . . .	341				
Repairs and Maintenance . . . . .	56				
Wood and Supplies . . . . .	75			.30	.30
		472			
<b>Pipe Foundry—</b>					
Salaries and Wages . . . . .	6,697			4.36	
Coke . . . . .	4,418			2.89	
Sand and other materials . . . . .	2,805			1.82	
Repairs and Renewals, etc. . . . .	3,021			1.96	11.0
		16,941			
<b>GRAND TOTAL . . . . .</b>		<b>4,10,784</b>			<b>80.56</b>

## (v) CREDITS.

	Per ton.	
	Rs.	Rs.
Acetate, 143.06 tons at Rs. 135 . . . . .	19,313	12.60
Crude Alcohol, 1,277 Imp. Gals. at As. 8 . . . . .	639	.42
Settled Tar, 10 tons at Rs. 40 . . . . .	400	.26
Neutral Oil, 603 Gals. at As. 8 . . . . .	301	.20
Tar Plant products as in January Cost sheet . . . . .	6,215	4.05
C. P. Methanol, 6,200 Gals. at As. 14 . . . . .	5,425	
Methyl Acetone, 2,700 at Rs. 1-4-0 . . . . .	3,375	
Denaturing Grade Methanol, 2,900 at Rs. 1-0-0 . . . . .	2,900	7.63
Good Pipes, 246.95 a Cwt. . . . .	34,571	
Irrigation Pipes, 101.75 at Rs. 3 a Cwt. . . . .	6,100	26.51
<b>TOTAL . . . . .</b>	<b>79,240</b>	<b>51.67</b>

1,149 tons Pig=41,544 or Rs. 36.4 a ton.

## (6) Revised estimate for the manufacture of 25,000 tons of Rolled Steel per annum.

## COST PER TON OF FINISHED STEEL.

	Rs.
Pig iron 1.1 tons at Rs. 27.5 . . . . .	30.00
Other materials . . . . .	5.00
Power 400 KWH at ¼ anna . . . . .	6.25
Refractories and Electrodes . . . . .	5.00
Repairs . . . . .	10.00
Wages and Supervision . . . . .	5.00
Miscellaneous . . . . .	1.75
Rolling . . . . .	30.00
	93.00
Total works cost . . . . .	93.00

## DEPRECIATION AND INTEREST.

	Lakhs of Rs.
Depreciation—	
Main plant . . . . .	6.5
Steel plant . . . . .	1.0
Pipe Foundry . . . . .	1.0
Interest—	
Main plant . . . . .	5.0
Steel plant . . . . .	1.25
Pipe foundry . . . . .	1.25
	16.00
Total . . . . .	16.00
Per ton . . . . .	Rs. 64
GRAND TOTAL . . . . .	Rs. 157

NOTE.—Assuming that half the quantity will be special steels and half ordinary bassar grades, the latter will fetch Rs. 54 and Rs. 108 a ton. So the cost of tool steel will be Rs. 206 a ton; which seems very satisfactory.

## (7) Letter No. 18, dated 7th July, 1929, from the Mysore Iron Works, Bhadravati.

I enclose herewith for the information of the Tariff Board a statement giving the latest estimate of the cost of manufacturing mild steel sections at Bhadravati. The statement also shows comparison with the cost of manufacture at the Tata Iron and Steel Company in 1925-26 as given in the report of the Tariff Board. Copies of two notes by our Chairman Sir M. Visvesvaraya on the manufacture of steel recently submitted to the Government of Mysore are also enclosed herewith.

Our Works Manager Mr. V. Ganesha Iyer and the writer will reach Ooty on Tuesday the 9th instant in time for examination on the 10th instant. The exact time may kindly be communicated to us at the Mysore Modern Hotel "Willoles" on the afternoon of the 9th instant.

## Enclosure No. 1.

## Comparative statement of manufacturing cost of one ton of merchant bars at Tata's in 1925-26 with our estimate.

Items.	Tata's.				Our estimate			
	Quantity used.	Rate per ton.		Cost per ton blown metal.	Quantity.	Rate per ton.		
		lbs.	Rs. A.			Rs. A.	lbs.	Rs.
Pig used	2,456	28	7.44	81	3.36	2,688	40	48 0
Scrap used	4	20	0	0	0.54	...	...	...
Gross metal cost	...	...	...	81	4.00	...	...	48 0
Loss	...	...	...	...	10.92%	...	...	16 1/2%
Less scrap (produced during the blow).	...	...	...	0	9.76	...	...	...
Net metal cost	...	...	...	80	10.24	...	...	48 0
Labour	...	...	...	1	8.16	...	...	2 0
Stores and supplies	...	...	...	0	7.04	...	...	1 0
Refractories	...	...	...	1	3.84	...	...	3 0
Blowing charges	...	...	...	...	...	...	...	0 8
Service	...	...	...	1	3.52	...	...	0 8
Total cost per ton blown metal (without ferro-addition).	...	...	...	35	0.80	...	...	54.75
Net metal cost (Bess. Blown metal, pig, scraps, etc.) at the openhearth furnace.	...	...	...	37	13.92	Since the Converter blown metal is to be poured straight into moulds, net metal cost remains at the same figure.	...	54.75
Feeding materials (including lime, etc., and ferro-alloys).	...	...	...	4	3.86	...	...	5 0
Labour (at the openhearth).	...	...	...	2	12.00	...	...	...
Stores (at the openhearth).	...	...	...	1	2.72	...	...	...
Ingot moulds and stools.	...	...	...	2	0	...	...	0.50
Refractories	...	...	...	1	5.28	...	...	...
Relining fund (openhearth).	...	...	...	4	8.00	...	...	...
Gas producer	...	...	...	2	13.96	...	...	...
Service (openhearth)	...	...	...	2	3.20	...	...	...
Overhead	...	...	...	...	...	...	...	1.00
Total cost of 1 ton of ingots.	...	...	...	58	13.44	...	...	61.25
<i>Blooming mills.</i>								
Yield	...	...	...	87.04%	...	...	...	87.5%

Items.	Quantity used.	Tata.		Our estimate.		
		Rate per ton.	Cost per ton blown metal.	Quantity.	Rate per ton.	Cost per ton.
		lbs. Rs. A.	Rs. A.	lbs.	Rs.	Rs. A.
Net metal cost after giving credit for scrap at Rs. 10.	...	...	64 1'12	...	...	67 0
Labour	...	...	1 7'68	...	...	3 0
				(also includes supervision.)		
Stores, tools and supplies.	...	...	1 0	...	...	1 0
Steam and electricity .	...	...	0 9'76	...	...	2 5'5
Gas (for soaking pits)	...	...	0 7'20	...	...	2 8'0
Rolls . . . . .	...	...	0 4'00	...	...	1 8'0
Services . . . . .	...	...	0 8'00	...	...	0 8'0
Soaking pits . . . . .	...	...	...	...	...	0 8'0
Cost per ton of blooming mill product.	...	...	<u>68 5'76</u>	...	...	<u>78 5'5</u>
<i>Merchant mills.</i>						
Yield . . . . .	...	...	86'77%	...	...	92'5%
Net metal cost after giving credit for scrap.	...	...	87 6'72	...	...	88 8'2
Labour . . . . .	...	...	6 8'96	...	...	3 0
				(including supervision.)		
Stores and tools and supplies.	...	...	2 4'00	...	...	1 0
Steam and electricity .	...	...	0 1'44	...	...	2 5'5
Gas producers (for reheating furnaces).	...	...	1 0'28	...	...	2 8'0
Rolls . . . . .	...	...	3 4'00	...	...	1 8'0
Service . . . . .	...	...	3 15'84	...	...	0 8'0
Repairs to reheating furnaces.	...	...	...	...	...	0 8'0
			<u>104 9'44</u>			<u>94 8'7</u>
Depreciation and interest at 5 per cent. on Rs. 8 lakhs.	...	...	...	...	...	10 0
Cost per ton . . . . .	...	...	<u>104 9'44</u>	...	...	<u>104 8'7</u>

Enclosure No. 2.

## BHADRABATI IRON WORKS.

(MANUFACTURE OF STEEL.)

(Note by the Chairman.)

In the month of June 1927, a printed note was submitted by me reviewing the position of the Iron Scheme and suggesting developments in certain desirable directions. One important suggestion made was the revival of the Jog-Falls Hydro-electric scheme for generating power and utilising part of

that power for the manufacture of steel at Bhadravati. Since then His Highness' Government have been pleased to sanction the requisite funds for carrying on experiments in steel manufacture.

Our Iron Works staff have, by assiduous effort, for which credit is due to the General Manager Mr. M. Venkatanaranappa and to the Works Manager Mr. V. Ganesh Iyer, been manufacturing on an experimental scale, steel of various kinds, from commercial steels to stainless steel. The time is now ripe for taking the next step forward.

The next step considered necessary to make the further advance demanded by the present circumstances of the work is explained in this note for the consideration and orders of Government.

2. The Jog-Falls hydro-electric power scheme is at present under preparation—the reservoir portion of the scheme by the Superintending Engineer, Shimoga Division, and the electrical portion by the Chief Electrical Engineer to Government. Their proposals are awaited.

It is for the consideration of Government whether they propose to treat the Jog-Falls power scheme as a separate productive undertaking, develop it under their own direct control and undertake to deliver power to the Iron Works at a fixed rate, or whether they wish the Board of Management to undertake the construction and operation of that scheme as well. On the decision arrived at in this respect will depend the scope of the work of the Board in future.

3. *Starting a Branch Factory at Bangalore.*—It is proposed to develop a block of 6,000 to 10,000 H. P. to begin with at the Jog-Falls, and utilise a substantial portion of it for the manufacture of steel and steel products at Bhadravati. Under the most favourable circumstances, it will take two to three years to construct the Jog-Fall power works and deliver the power for use at Bhadravati. Until that power is available it is proposed to establish a small branch factory in Bangalore, somewhere between the City Railway Station and Yeswantpur, and equip it with an electric furnace and a rolling mill for the manufacture of steel products with the aid of the spare electric power available from the Cauvery Power Scheme. As only night supply will be largely availed of, it is suggested that this power may be supplied in the earlier stages at its cost price.

4. *Estimate of cost and arrangements for purchase of plant.*—It is proposed to manufacture steel ingots by the Converter process at Bhadravati and by the electric process chiefly from sponge iron in the Electric Furnace to be installed in Bangalore and convert both classes of ingots into semi-finished or finished products in a rolling mill. It is proposed to manufacture 50 to 60 tons of steel daily provided power can be had from the Cauvery Power Scheme at two pies or less per unit.

The capital outlay immediately needed for the purpose will be Rs. 4 lakhs for the additional equipment at Bhadravati and Rs. 8 lakhs for the proposed branch factory in Bangalore, or a total of about 12 lakhs. By spending this amount, it is expected that the earning power of the scheme will increase by about Rs. 3 lakhs.

If the general policy of development and the capital outlay involved are approved, immediate steps will be taken to furnish detailed estimates and to proceed with the construction of the branch factory in Bangalore. A great deal of detailed information required for this purpose is already collected on the Works.

In the event of the work being sanctioned, Mr. N. Madhava Rau, Chief Secretary to Government now on deputation to England, who is a member of the Board of Management and who at one time was the General Manager of the Works himself, may be authorised to assist the Board in negotiating for the purchase of the plant.

5. *Lines of Future Advance.*—Our chief concern is to make the Works pay. To do this it is necessary to develop two or three or more lines of products so that if price of one or other of these be unfavourable at any time the remaining ones may protect the plant from loss. With this end in



view the pipe foundry is being enlarged. Steel manufacture is the next natural development and later, may come finished products in iron and steel for the local market.

These extensions depend on the supply of cheap fuel. But wood is not available at Bhadravati in sufficient quantity for this purpose, and the price of coal is prohibitive. Our only hope lies in developing electric power at the Jog-Falls if it can be had sufficiently cheap for our purpose. If steel and steel products are first made, the next step would be the manufacture of machinery. At the same time it is necessary not to attempt too many lines of products, but to concentrate on a few which promise favourable results from a commercial point of view. To arrive at sound practical decisions in these respects, further research and investigation have to be vigorously pursued.

6. *Why steel should be developed.*—Steel is a basic industry on which many other industries are dependent. From steel a large number of agricultural tools and implements can be made which have a ready sale among the rural population of the Mysore State and South India, generally. With the aid of the Electric Furnace superior qualities of steel and alloy steels can be manufactured by using chrome, manganese, titanium, vanadium and other comparatively rare minerals of which there is a supply in Mysore. Steel castings are in demand on the Railways.

The total production of steel in the world during 1928 was 107,000,000 tons. Of this the United States of America, the most prosperous country in the world, produced 51,000,000 tons. At this rate India with her population of 320,000,000 ought to be able to manufacture 136,000,000 tons in a year while it actually produced less than 500,000 tons in 1928. These figures cannot fail to convince the most sceptical that there will be a growing demand for the expansion of this industry as the country advances in civilization and material prosperity.

7. *Staff kept trained.*—With the aid of the grant generously given by Government for experiments, several members of the Bhadravati staff have gained experience in the manufacture of steel and they feel confident that they will be able to handle the manufacturing side with success.

When the price of pig iron stood at about Rs. 95 per ton which it did when the Factory started working in January 1923, experts opined that Government would be losing money by operating the plant and recommended that it should be shut down till prices improved. As ill luck would have it, the price of pig iron has not only not improved but have been steadily going down ever since and to-day it stands at about Rs. 45 or less than 50 per cent. of the original price. In spite of this disastrous fall, the work is earning enough to pay its expenses. If the prices stood even at the level they were at the time the Works started operation, when disaster was predicted, it would be now making a clear profit of about Rs. 10 lakhs a year. This is indubitable testimony that our staff are able to carry on operations in a favourable manner. A further considerable lowering of the costs of production is expected as finished products come to be manufactured and their quantities increased.

8. *Financial Aspect.*—It may be asked: "This is all very well. The work is barely paying its operation expenses. It is not yet able to meet the full depreciation charges and it has so far not given a single rupee of profit. How in these circumstances can a further outlay on a scheme of this sort be justified?"

The answer is simple, and it will be readily understood by business-men who have a knowledge of the economic conditions under which industries are conducted, particularly those who are in close touch with the recent vicissitudes of the iron and steel industry.

There was at first some difficulty in the execution of the scheme. The work was not carried out according to the original plans. The estimates outlay was largely exceeded. The construction which was to have been done in about two years was spread over five. The advantage of high

prices of pig iron was lost and as already explained there has been a further disastrous fall in prices between the date the work started operation and the present time. That notwithstanding these mishaps and disadvantages, the work is able to meet its working expense at a time of unprecedented depression of the industry, when similar long established concerns are being closed down in other parts of the world, is a sign of the strength of its position.

In Mysore we have had to carry on the work under extreme difficulties, due to want of trained men, dearth of expert assistance, lack of tariff protection or bounties and absence of popular support or interested public opinion.

The Iron Works is giving employment to more than 5,000 persons—both professionals and workmen—and supporting indirectly a population of 20,000 to 25,000 in the State.

Even in industrially advanced countries like the United States of America, basic industries of this magnitude take time to become established. It is not every industry that is started that succeeds. Not infrequently as many as 40 per cent. of the industries started in any single year fail, and have to close down. Mr. Ford will not make any money on the first million cars of his new pattern. So will it be here. The three iron and steel works on the Bengal side were established after one of them had lost heavily in pioneering the industry, and even at present they cannot all be said to be in a thriving condition.

Similarly, perseverance is needed in Mysore especially when the object is to establish a basic industry of the importance of iron and steel. Mysore State has on the whole done well in the past in regard to its productive undertakings. Taken as a whole these undertakings are giving a return of over 4½ per cent. on the capital invested in them, a result which having regard to the attendant indirect benefits, must be deemed highly satisfactory.

9. The points in regard to which definite decisions or orders of Government, are required may be summed up as under:—

*Points for decision.*

(1) Whether the Jog-Falls hydro-electric power scheme may be rapidly developed and power made available for:—

- (1) The Bhadravati Iron Works,
- (2) other industries like paper and lumber, and
- (3) supply of electric light and power to populous towns in the four northern districts of the State and possibly also to the neighbouring British districts of the Bombay Presidency.

(2) If the Power Scheme is to be proceeded with, whether the development will be entrusted to the Chief Electrical Engineer under the direct supervision of Government, on the undertaking that power will be supplied to the Bhadravati Iron Works at a fixed rate to be specified for the purpose; or whether it is the wish of Government that the Board of Management of the Iron Works should develop the Power Scheme also on the lines outlined.

(3) Whether immediate arrangements may be made as proposed for the manufacture of steel on a commercial scale by starting a branch factory in Bangalore at an outlay of about Rs. 12 lakhs including the cost of additional equipment required at Bhadravati.

(4) Whether in the event of a decision being reached to proceed with the hydro-electric power scheme, the investigations necessary for the utilisation of the power for use in towns and for subsidiary industries may not be undertaken immediately and if it should be, whether Government will get this work done by their own departments or whether they desire that it should be developed under the supervision of the Board.

(5) If the foregoing proposals for the manufacture of steel meet with approval, Mr. N. Madhava Rau now on deputation in England, may be authorised to make purchases for the proposed branch factory or negotiate for the same, as required, in communication with the Board.

What is needed to facilitate progress is an immediate definite pronouncement of the lines of policy which Government propose to follow in respect of these proposals. Estimates of cost, etc., will be separately submitted, for sanction as investigation proceeds and detailed schemes become ready one by one.

10. *Conclusion.*—Steel is the frame work of civilisation, and both electric power and steel are the basic elements of our future industrial strength. The Jog-Falls power scheme is overdue. The Jog is one of the world's greatest falls and no modern State possessing such Falls would be content to look upon the stupendous waste of energy that is going on with unconcern.

Steel manufacture is the next natural step in the progressive evolution of the Iron Scheme. In taking this step, we will be only carrying out the intention of the original scheme which was to develop the industry from stage to stage, from raw materials to semi-finished products, and ultimately to finished commodities.

The manufacture of iron and steel flourished near Bhadravati till within 40 years ago and its revival is now the plain duty of both the Government and the people. It will be sound policy to develop the power scheme and the steel industry, and by their means help to bring numerous subsidiary industries into existence with the aid of private capital in order to foster industrial life in the country.

(Sd.) M. VISVESVARA,  
Chairman,  
Board of Management.

BANGALORE;  
The 15th April 1929.

Enclosure No. 3.

### BHADRAVATI IRON WORKS.

#### STEEL MANUFACTURE.

#### *Supplementary Note.*

Since writing the Note on the Manufacture of Steel which was approved by the Board at their meeting held on the 15th April 1929, the writer has had the advantage of meeting and discussing the question with Mr. S. C. Forbes, Chief Electrical Engineer to Government, who kindly explained his future ideas on the subject of electric power supply to Bhadravati, ideas which if found feasible after detailed examination, and acceptable to Government will greatly simplify the problem.

2. Briefly stated the proposals of Mr. Forbes are:—

- (1) A block of 3,000 to 6,000 H. P. (Permanent 3,000 H. P. and Temporary 3,000 H. P.) can be delivered for use at Bhadravati by constructing a power line from the Hulikere Tunnel Power Station near Mysore to Bhadravati *via* Hassan and Chickmagalur.
- (2) The cost of laying the power line from Hulikere to Bhadravati is estimated at Rs. 15 lakhs and that of the sub-station at Rs. 5 lakhs, making a total of Rs. 20 lakhs.

This outlay of Rs. 20 lakhs can be treated as part of the capital expenditure of the Cauvery Power Scheme and power can be given to the Iron Works at a cost not exceeding 25 per unit.

- (3) The power can be delivered at Bhadravati within 12 months from the date of Government sanction. This will give the Iron Works sufficient time to provide itself with the plant and equipment needed for the manufacture of steel.
- (4) Power can be supplied in addition to towns (Channarayapatna, Hassan and Chickmagalur) and factories along the line *en route* to Bhadravati.
- (5) As a separate proposition, the power line can be also extended to Harihar and Davanagere and also to Shimoga if necessary.

3. Mr. Forbes stated that he has the proposals nearly ready for the construction of the Jog-Falls power scheme as well as at a very moderate outlay and that he will be able to develop power up to 10,000 H. P. as a first instalment, in 2½ to 3 years' time so as to fit in with the existing Cauvery hydro-electric power system.

4. The foregoing proposals offer a very simple and comparatively inexpensive solution of the problem of steel manufacture. There will be no necessity for a branch factory in Bangalore and the cost of steel scheme can be reduced from Rs. 12 to Rs. 11 lakhs or perhaps less.

5. If these proposals are found feasible after Mr. Forbes has had time to consider them in detail, the only points on which the orders of Government will be required with reference to the steel proposition are the following:—

- (1) Whether Government would be pleased to accept the proposals roughly outlined above involving an outlay of Rs. 20 lakhs for the new power line and about Rs. 11 lakhs for the plant required for steel manufacture at Bhadravati.
- (2) Whether a rate of 0.15 of an anna or one not exceeding a maximum of 0.2 of an anna per unit of power to be supplied for purposes of the Bhadravati Works for a period of three years to begin with would be acceptable to Government.
- (3) If (1) and (2) above are approved, whether the management may at once place themselves in communication with steel experts and Mr. Forbes for the preparation of the necessary detailed plans and estimates, and with Mr. N. Madhava Rau for negotiating with the manufacturers of machinery and plant in Europe so long as he is on deputation there.

6. These proposals may be taken as superseding the points raised in paragraph 9 of the Note dated the 15th April 1929. The solution suggested by Mr. Forbes is very opportune and his proffered co-operation in these circumstances will be welcome to the Works. The manufacture of steel with electric power will be possible only if power is obtained very cheap. This is the experience in Europe and in all other parts of the world. Hence the suggestion in paragraph (5) (2) to limit the cost to 15 or 2 of an anna per unit for the first three years. Steel manufacture is a measure of transcendent importance to the financial interests of the Bhadravati Iron Scheme and by sanctioning both the power extension and the steel schemes at the same time, Government will be taking a step of great potential value to the economic interests of the State.

(Sd.) M. VISVESVARAYA,

Chairman,  
Board of Management.

BANGALORE;

The 21st April 1929.

THE MYSORE IRON WORKS, BHADRAVATI.

B.—ORAL.

**Evidence of Mr. M. VENKATANARANAPPA recorded at Bombay on Monday, the 12th November, 1928.**

*President.*—I would like to explain to you in this enquiry that there is only one point. In the Steel Enquiry we found really speaking that so far as pig iron was concerned, there was no necessity for recommending any protection but there was the duty of 10 per cent., which we did not touch because really at that time no question arose. Since then, Government have more or less accepted the principle that raw materials of industries as far as possible should be freed from the revenue duty. Of course, pig iron is one of the principal raw materials of those persons who make machinery and other things.

*Mr. Venkatanaranappa.*—I don't believe that it is the principal raw material so far as the question of cost is concerned. But it is no doubt an essential raw material.

*President.*—Principal in the sense that machinery cannot be made without pig iron. At least some kind of machinery cannot be made without pig iron.

*Mr. Venkatanaranappa.*—That is true.

*President.*—The question has now arisen whether this duty of 10 per cent. really acts as a protective duty, though it is only a revenue duty. No pig iron is imported to speak of and therefore it is acting as a protective duty more or less and the pig iron on the whole is being sold at a price which is based on the import price including the duty.

*Mr. Venkatanaranappa.*—At present pig iron is sold at a price which is below the import price including the duty. But of course it takes advantage of the duty to a certain extent but not to the fullest extent.

*President.*—The point is this. In all industries we found that an article manufactured in India, even if it is of the same quality, does not generally command the same price as the imported article.

*Mr. Venkatanaranappa.*—That is true.

*President.*—Therefore they have got to make a certain reduction in the price.

*Mr. Venkatanaranappa.*—That won't apply to charcoal iron. Still, we are making that reduction in price.

*President.*—Really speaking they get the full duty from the consumer though the price that they get is on the whole slightly lower than the import price *plus* the duty.

*Mr. Venkatanaranappa.*—I don't agree that they get the whole duty because the price is very much less than the import price *plus* the duty.

*President.*—Supposing the duty was removed, what difference would it make to them?

*Mr. Venkatanaranappa.*—To whom?

*President.*—To the manufacturers of pig iron?

*Mr. Venkatanaranappa.*—I think that our price would be reduced to some extent. But that is because manufacturers in Germany, France or Belgium would be willing, if necessary, to sell their products at less than their cost price.

*President.*—The whole point is what would be the effect of the removal of the duty. Would you have to reduce the price to the full amount of the duty?

*Mr. Venkatanaranappa.*—It cannot ordinarily be the full amount but the maximum will be the full amount of the duty.

*President.*—Therefore, the internal price is limited by the import price.

*Mr. Venkatanaranappa.*—It is influenced by that.

*President.*—The import price would be lowered by the full amount of the duty.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Therefore the limit would be that.

*Mr. Venkatanaranappa.*—That would be the absolute limit.

*President.*—Now, if we made any recommendation for the removal of the duty, it would affect you.

*Mr. Venkatanaranappa.*—Certainly it would.

*President.*—As a matter of fact in our previous enquiries I don't think that the manufacturers of pig iron have really claimed that they require any assistance. Of course we have again asked them.

*Mr. Venkatanaranappa.*—There is a difference between coke pig iron and charcoal pig iron. We will go into that later. It does not affect them quite to the same extent as it will affect us because their cost of manufacture is very much lower.

*President.*—That is the main point in this enquiry, and we thought that we would give you an opportunity of explaining your position to us.

*Mr. Venkatanaranappa.*—The position is this. At present we are making only charcoal pig iron and castings but if we find that there is not enough local market to absorb the material in the semi-finished state in which we are now making our idea is to go in for the manufacture of steel later on. That will have to come in, and can only come in, if, in the interval, there is protection and we can make a little money. Otherwise it will discourage us from proceeding further.

*President.*—As far as I can see, the whole trouble arises in your case in this way. First of all, you are in competition against the cheaper coke iron.

*Mr. Venkatanaranappa.*—That is true.

*President.*—They get a better price in their home markets and therefore they are able to sell at lower prices in Southern India.

*Mr. Venkatanaranappa.*—Yes, to dump it in our market. If you don't like the word "dumping"—I know you have an aversion for that word—they are able to sell at a lower price in our market. That is one of our troubles.

*President.*—That trouble will always arise, will it not?

*Mr. Venkatanaranappa.*—Later on people may recognise the superior quality of our iron.

*Dr. Matthai.*—You cannot altogether complain of it because I find that the lowest price that has been charged in your area is about Rs. 39 *ex-works* by Burn's. Even that Rs. 39 would give them quite a reasonable profit. They are not selling below costs.

*Mr. Venkatanaranappa.*—In their own area, they are selling at about Rs 61 or Rs. 62. The sales to the East Indian Railway are at that rate.

*Dr. Matthai.*—They charge different rates in different areas.

*Mr. Venkatanaranappa.*—At one time they had an understanding or rather the combine had an understanding to sell at about Rs. 65 to Rs. 66 delivered at the port. That they called the port price. Whether it was Bombay, Madras or Calcutta, they would sell at Rs. 65 or Rs. 66—I forget the actual figure. Then, they would charge the actual freight from the port as against the imported material. At that time we were well off because we could depend upon the same price either at Bombay or at Madras, so far as internal competition was concerned.

*Dr. Matthai.*—It looks to me from the list of prices that you give in your enclosure to the Railway Board that the lowest they would charge in any Indian area would be their export f.o.b. price.

*Mr. Venkatanaranappa.*—No, it is less than that. The Indian Trade Journal gives it as Rs. 45. Even the Port Trust Returns, Calcutta, give Rs. 45 as the export price of pig iron, but I know it is slightly lower than that.

*Dr. Matthai.*—Is Rs. 45 ex-works?

*Mr. Venkatanaranappa.*—Ex-works would be about Rs. 42.

*Dr. Matthai.*—They give Rs. 39-8 as the average export price ex-works last year.

*Mr. Venkatanaranappa.*—Do the works themselves say so?

*Dr. Matthai.*—Yes.

*Mr. Venkatanaranappa.*—But I am taking the published figures. That would be their rate to the Madras and Southern Mahratta Railway, about Rs. 39-8. Their sales to Hubli would fetch them even less.

*President.*—In the export, they don't include sales in India.

*Mr. Venkatanaranappa.*—No.

*President.*—They have to quote an export price which with freight and other charges would enable them to under-quote any foreign pig iron in a foreign country.

*Mr. Venkatanaranappa.*—Dr. Matthai was saying that the lowest price quoted by them in India was Rs. 39-8. What I say is that their quotation to the Madras and Southern Mahratta Railway would work out to less than Rs. 39-8 on their supplies to Hubli.

*President.*—You have not got any definite information about Hubli position.

*Mr. Venkatanaranappa.*—No.

*President.*—Could you give us a figure ex-works corresponding to the figure at which they are selling round about Hubli?

*Mr. Venkatanaranappa.*—It is not round about Hubli. It is only to the Madras and Southern-Mahratta Railway at their workshops in Perambur, Arakonam and Hubli.

*President.*—This supply is to the Madras and Southern-Mahratta Railway works.

*Mr. Venkatanaranappa.*—They supply at the same rate to all the three shops, I understand.

*President.*—Is that all the pig iron that they require?

*Mr. Venkatanaranappa.*—Yes.

*President.*—It is only very little.

*Mr. Venkatanaranappa.*—They don't make any castings. The East Indian Railway and North-Western Railway are the biggest consumers. So far as I know even with the railway material rate, the freight from Madras to Hubli would be about Rs. 5 and odd, so that on their supplies to Hubli they would have got about Rs. 34 net.

*Dr. Matthai.*—That is arrived at by deducting Rs. 5 from Rs. 39.

*Mr. Venkatanaranappa.*—Yes, roughly.

*President.*—The amount of pig iron used is surprisingly small.

*Mr. Venkatanaranappa.*—Yes, this is all the Madras and Southern-Mahratta Railway use.

*President.*—The South Indian Railway also use about the same quantity

*Mr. Venkatanaranappa.*—They use a smaller quantity net English pig iron exclusively.

*President.*—Do they import English pig iron?

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—Do you mean the ordinary English pig iron?

*Mr. Venkatanaranappa.*—They get some special brands.

*Dr. Matthai.*—What do you mean by special brands? Is it some kind of charcoal pig?

*Mr. Venkatanaranappa.*—It is coke iron with special analysis. Some furnaces in England have got their own special analyses and brands. They say that they are a special quality of iron. It is only at Ajmere that they want low phosphorous iron.

*President.*—That is Bombay, Baroda and Central India Railway.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—They make steel castings by the converter process.

*Mr. Venkatanaranappa.*—Yes.

*President.*—They may be getting Swedish iron.

*Mr. Venkatanaranappa.*—I think that they are getting their supply from England.

*Dr. Matthai.*—Is that charcoal pig?

*Mr. Venkatanaranappa.*—It is coke pig which contains low phosphorus. Of course the English coke contains less ash and phosphorus than the Indian pig.

*Dr. Matthai.*—What it comes to is this that all this special iron which is imported is iron with low phosphorus content.

*Mr. Venkatanaranappa.*—Mostly that.

*Dr. Matthai.*—In 1926-27, the amount of pig iron imported into the country was somewhere about 1,500 tons. But last year it went up to over 5,000 tons. Now, is any considerable quantity of it iron of the sort that you could supply, because your iron also is low in phosphorus?

*Mr. Venkatanaranappa.*—Our iron contains more phosphorus than what they want at Ajmere.

*President.*—In 1926-27, the total amount of imports is only 1,267 tons of which nearly a third is in Burma. Madras has only imported 172 tons.

*Mr. Venkatanaranappa.*—At that time the South Indian Railway were transferring their workshops from Negapatam to Golden Rock. So, they might not have made any casting at that time. It is mostly Ajmere and the South Indian Railway that import pig.

*Dr. Matthai.*—You are not suggesting that your charcoal pig would not be useful for steel castings made by the converter process.

*Mr. Venkatanaranappa.*—The phosphorus content in our iron is higher than what is wanted for the converter. They want it to be as low as .05 per cent. and our iron contains .1 per cent. and if they have to re-melt it in the copula that would possibly add another .02 per cent.

*Dr. Matthai.*—Have the Kumardhubi people ever used your pig?

*Mr. Venkatanaranappa.*—Only a small quantity.

*Dr. Matthai.*—They have a converter process for steel castings.

*Mr. Venkatanaranappa.*—They have both a converter process and an open hearth process.

*Dr. Matthai.*—They have a converter process set up recently.

*Mr. Venkatanaranappa.*—They have said that our iron is very much better than Bengal iron but not quite so good as the imported.

*President.*—What is the quantity of phosphorus contained in your pig?

*Mr. Venkatanaranappa.*— .1 per cent.

*Dr. Matthai.*—Is .02 per cent. the normal limit?

*Mr. Venkatanaranappa.*— .02 is the lowest Swedish.

*President.*—That is nearly five times.

*Mr. Venkatanaranappa.*—Yes.

*President.*—The lowest they can take is .05.

*Mr. Venkatanaranappa.*— .03 or .04 they can take. We have some quantities of ore with which we can make .05 or .06. That is all right for our converter using hot metal direct but not for them because they have to re-melt it again with coke which will add a little more phosphorus.

*President.*—Your real market is Madras Presidency, is it not?

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*Mr. Venkatanaranappa.*—Madras Presidency, Southern Mahratta country, Bombay and to some extent Ahmedabad, Baroda and Surat.

*President.*—We must ascertain how much pig is sold in those markets?

*Mr. Venkatanaranappa.*—I can give you a rough idea.

*President.*—Can you?

*Mr. Venkatanaranappa.*—The consumption by the important railways in this territory is:—

Great Indian Peninsula . . . . .	2,500 tons.
Bombay, Baroda and Central India . . . . .	1,250 here, leaving out Ajmere.
Madras and Southern-Mahratta . . . . .	1,500.
South Indian Railway . . . . .	500 tons now—they may possibly increase later.

*President.*—Three of the railway systems you mentioned are company worked railways.

*Mr. Venkatanaranappa.*—Yes, except the Great Indian Peninsula Railway. Bombay, Baroda and Central India are regularly taking from us about half the quantity of iron they require.

*Dr. Matthai.*—They have stuck to you till now.

*Mr. Venkatanaranappa.*—Not wholly. They made some experiments and found that a mixture of our iron and the Bengal iron in the proportion of half and half gave them very good results. We wanted them to try our iron wholly but that they would not depart from their mixture and they are continuing that mixture.

*President.*—Their demand is 1,250 tons.

*Mr. Venkatanaranappa.*—Yes, and they are taking about 650 tons from us.

*Dr. Matthai.*—The total demand of the Great Indian Peninsula Railway is 2,600 tons.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—You sold last year about 600 tons.

*Mr. Venkatanaranappa.*—Not last year, but the year before last.

*Dr. Matthai.*—Last year you lost the contract.

*Mr. Venkatanaranappa.*—Yes, also this year.

*Dr. Matthai.*—Why?

*Mr. Venkatanaranappa.*—Because of the lower price offered by the Bengal companies.

*Dr. Matthai.*—I find that your ex-Jhansi quotation is more favourable.

*President.*—Their Parel workshop is much more important, is it not?

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—Your quotation ex-Jhansi was much lower. Now was it that you did not get the contract?

*Mr. Venkatanaranappa.*—Our quotation on that portion was lower and still we did not get the contract. The combine's price was Rs. 2 cheaper and the railway company said they would accept the cheaper quotation. Bombay is at present a very disturbed market but I think we can take the normal demand at 2,500 tons. Southern Mahratta country will be able to take 2,000 tons though the present demand is about 1,500 tons. Madras will absorb 1,600 tons. The demand in Ahmedabad, Baroda and that part of India may be taken about 2,000 tons a year.

*President.*—They are, really speaking, beyond your area.

*Mr. Venkatanaranappa.*—I think our freight will be slightly higher than from Bengal, but Baroda has been taking regularly from us and in Ahmedabad we have been selling regularly though small quantities. As regards Bombay we are nearer and have cheaper freight.

*President.*—What I want to know is, as between you and the Bengal works, in which markets have you got a distinct advantage?

*Mr. Venkatanaranappa.*—In the area I have spoken of except Ahmedabad, Baroda, etc.

*President.*—What is your present market other than those you have already mentioned?

*Mr. Venkatanaranappa.*—Leaving out the railways it is very little at present.

*President.*—What does it come to?

*Mr. Venkatanaranappa.*—

	Tons.
Southern Mahratta Country . . . . .	1,500 to 2,000
Bombay . . . . .	1,500
Madras Presidency . . . . .	1,000
Bangoon . . . . .	600
then Mysore, Hyderabad and Miscellaneous . . . . .	500

that is about 5,000 tons.

*President.*—5,000 tons sold locally outside the railways?

*Mr. Venkatanaranappa.*—Yes.

*President.*—The price that you get is in competition against the Bengal iron works?

*Mr. Venkatanaranappa.*—Yes.

*President.*—That is to say, you have got to underquote these people?

*Mr. Venkatanaranappa.*—Practically the same quotation or a rupee or so less at times.

*President.*—What is the average price that you get for this 5,000 tons?

*Mr. Venkatanaranappa.*—We get about Rs. 55 *ex-works*.

*President.*—That you may generally depend on?

*Mr. Venkatanaranappa.*—Yes.

*President.*—You don't get any orders from the railways?

*Mr. Venkatanaranappa.*—Just at present we have not got any except from the Bombay, Baroda and Central India Railway for 700 tons at Rs. 51 or Rs. 52 per ton.

*Dr. Matthai.*—There is a certain amount of cast iron pipes that you sell?

*Mr. Venkatanaranappa.*—Yes, but at the present moment that market also is very bad. Prices have gone down considerably.

*President.*—These cast iron pipes you sell in the neighbourhood?

*Mr. Venkatanaranappa.*—So far, our sales of pipes have been mostly within Mysore State and partly to the Great Indian Peninsula Railway and some Southern Mahratta towns.

*President.*—You manufactured about 4,000 tons in 1926-27?

*Mr. Venkatanaranappa.*—That was exceptional because we had orders for 16" pipes for the Mysore State. The demand for bigger diameter pipes is not very great.

*President.*—What do you estimate your sales at—of pipes?

*Mr. Venkatanaranappa.*—About 3,000 tons.

*Dr. Matthai.*—3,000 tons you can count on as a certain factor?

*Mr. Venkatanaranappa.*—Yes.

*President.*—Is that remunerative?

*Mr. Venkatanaranappa.*—Not at the present price.

*President.*—What would you get for your pig iron?

*Mr. Venkatanaranappa.*—Rs. 50 *ex-works*.

*President.*—What is the price that you get for your pipes per cwt.?

*Mr. Venkatanaranappa.*—We used to get about Rs. 8 or 9, at present we are getting Rs. 7.

*President.*—That is Rs. 140 a ton.

*Mr. Venkatanaranappa.*—Yes.

*President.*—You charge the pipe department Rs. 50 per ton for that pig iron leaving Rs. 90 for other costs and charges?

*Mr. Venkatanaranappa.*—We have to pay a very high price for our coke and the cost of manufacturing cast iron pipes is very high.

*President.*—All your coke you use in the pipe foundry?

*Mr. Venkatanaranappa.*—Yes. On the continent they take blast furnace metal direct and cast them into pipes but that is not allowed according to the British Standard Specifications.

*Dr. Matthai.*—You get coke at Rs. 30?

*Mr. Venkatanaranappa.*—Rs. 37 I think.

*President.*—You have not given the cost of your pipes?

*Mr. Venkatanaranappa.*—I have given separate sheets. It has varied from month to month. Our pipe foundry operations have not yet been as standardized as in the other branches; interruptions have been numerous so that we could not get on steadily. But once we get over these troubles we can make pipes at about Rs. 5-8 to Rs. 6 a cwt. or Rs. 120 a ton.

*President.*—Rs. 90, is what it really comes to?

*Mr. Venkatanaranappa.*—It will come to that. Coke costs Rs. 10; then there is the melting loss of pig iron.

*President.*—You only recover Rs. 50 at present in the pig iron?

*Mr. Venkatanaranappa.*—Yes, and Rs. 50 is as much as we can manage as we have to compete in the market and sell 3,000 tons.

*Dr. Matthai.*—How much pig iron do you export?

*Mr. Venkatanaranappa.*—We have accumulated some stock otherwise the rest of it is really exported.

*President.*—How much pig iron would this 3,000 tons of pipes absorb?

*Mr. Venkatanaranappa.*—3,500 tons: melting and other losses would be about 500 tons.

*President.*—Bad pipes would be broken and put back?

*Mr. Venkatanaranappa.*—Some bad pipes we sell as irrigation pipes where there no pressure is necessary. These we sell for irrigation purposes. If the pipes are too bad even for that we break them up and re-melt them in the copula.

*Dr. Matthai.*—Last year you produced about 17,000 tons of pig and you sold about 9,000 tons locally. Am I right?

*Mr. Venkatanaranappa.*—Roughly, yes.

*Dr. Matthai.*—And 8,000 tons you exported?

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—What is the average price you realized for your exports?

*Mr. Venkatanaranappa.*—Rs. 40 roughly.

*Dr. Matthai.*—Is this 8,000 a factor which you can depend on?

*Mr. Venkatanaranappa.*—I think we can. We have built up a market. Our iron is appreciated in America and we can always depend on that market for about 5,000 tons, Japan is taking about 1,500 to 2,000 tons and the Continent is taking some. About 8,000 tons we can depend upon.

*President.*—At Rs. 40 f.o.r. works?

*Mr. Venkatanaranappa.*—Rs. 40 to Rs. 42, sometimes more and sometimes less. It depends upon storage and other charges. If the goods are sold before the boat reaches America, we get Rs. 40 to Rs. 42 but if unfortunately the iron goes into storage, then sometimes we get even Rs. 38 per ton.

*President.*—Then you export on your own account?

*Mr. Venkatanaranappa.*—Yes.

*President.*—Then you can't be safe.

*Mr. Venkatanaranappa.*—We can always take Rs. 40 as the average. Our exports to Japan fetches a little more.

*President.*—If the duty on pig iron is removed it is quite possible that the price of pipes might also go down.

*Mr. Venkatanaranappa.*—Yes, it might. As a matter of fact the price of pipes is very low at present in all countries. Belgium is quoting £6 c.i.f. Bombay.

*Dr. Matthai.*—£6.8 at Karachi. That would mean Rs. 140 in your area?

*Mr. Venkatanaranappa.*—Yes.

*President.*—You must have a good demand for your pipes in your own territory?

*Mr. Venkatanaranappa.*—Yes, as a matter of fact we are putting up another plant because we are expecting an order for about 10,000 tons from Bangalore next year. As I said, for bigger sizes it is very difficult to get regular orders, and even there, there is a lot of difficulty because of the competition of steel pipes.

*President.*—What you are losing on to-day is the export?

*Mr. Venkatanaranappa.*—Yes. There are two difficulties, one is that we are not selling as fast as we are producing, and that is locking up our working capital and, secondly, we are losing on the export because even at Rs. 40 it is difficult to sell outside. As it is we are selling on the sea board of America on the east coast where points of consumption are far away from the internal blast furnaces. At one time when the price of charcoal pig iron was \$28 in America we were getting a very good return. That price was suddenly reduced to \$24. The difficulty is to get suitable freight from Marmagoa. For instance we had an offer for 3,000 tons of iron from Buenos Ayres, but it fell through as we could not get cheap freight. We cannot export from Bombay, we must export from Marmagoa or Madras. It won't pay us to export from Bombay because that will put up the cost both for handling and railway freight.

*President.*—At present most of your exports are from Marmagoa?

*Mr. Venkatanaranappa.*—Some from Madras.

*President.*—That is a railway lead of 300 miles.

*Mr. Venkatanaranappa.*—329 miles from Bhadravati.

*President.*—Do you have to pay a uniform rate?

*Mr. Venkatanaranappa.*—No. The Madras and Southern Mahratta Railway have given us special freight rates. It is Rs. 6 to Marmagoa with Rs. 1-11-3 wharfage charges, or Rs. 7-11-3. We have got to pay Rs. 6 to Madras and on the harbour railway 6 annas a ton. But at Marmagoa the handling and other charges are lower. So far as we are concerned Marmagoa is the best port for us.

*President.*—Really speaking your production is so small that you really do not want this export business.

*Mr. Venkatanaranappa.*—India ought to absorb this 28,000 tons, but it is so difficult.

*President.*—But this market ought to absorb the whole lot.

*Mr. Venkatanaranappa.*—It is only 10,000 tons.

*President.*—What is 10,000 tons?

*Mr. Venkatanaranappa.*—The sale in the market that is favourable to us leaving out the exports. I think the total sale in India is about 100,000 tons.

*President.*—140,000 tons. It is the total pig iron sold as pig iron in the Indian market.

*Mr. Venkatanaranappa.*—Then I think the railways themselves take about 80,000 tons out of 140,000 tons. As I said our sales at present including the railways is 10,000 tons.

*President.*—Even if you joined the pool it won't help you very much.

*Mr. Venkatanaranappa.*—This 10,000 tons we will get without any trouble and the rest will have to be exported or made use of locally.

*Dr. Matthai.*—Assuming you are going to get your increased output of 27,000 tons, out of that your market for pig iron would absorb about 12,000 tons.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Then there are pipes which would be about 5,000 tons making a total of 17,000 tons.

*Mr. Venkatanaranappa.*—Even then about 10,000 tons would be left over for export or for other uses at Bhadravati.

*President.*—You have got your own railway line.

*Mr. Venkatanaranappa.*—Yes. We have at present 500 to 550 miles including the tramways.

*President.*—How much of that is managed departmentally?

*Mr. Venkatanaranappa.*—About 350 miles are managed departmentally and the rest by the Madras and Southern Mahratta Railway.

*President.*—They ought to consume a lot of pig iron.

*Mr. Venkatanaranappa.*—They have a lot of scrap.

*President.*—What sleepers do they use?

*Mr. Venkatanaranappa.*—They use wooden sleepers.

*President.*—Because they are near the forests.

*Mr. Venkatanaranappa.*—Yes. We are also interested in the use of these sleepers. They are the best and I think they will continue to use wooden sleepers and they are not likely to use cast iron sleepers.

*President.*—Do they not use it for castings, for axle boxes?

*Mr. Venkatanaranappa.*—The railway line from Harihar to Bangalore is managed by the Madras and Southern Mahratta Railway and the Mysore Railway shops are not as busy as are might wish. Eventually of course that will develop.

*President.*—For that you would require steel. Cast iron will not do.

*Mr. Venkatanaranappa.*—They will have to use some castings, but at present they use very little. 12,000 tons would include all that. Hyderabad is one of those territories where we have an advantage and we have been selling to Hyderabad Mint, railways and foundries.

*Dr. Matthai.*—How much have you sold in the past to Hyderabad?

*Mr. Venkatanaranappa.*—The mint takes about 200 tons regularly.

*President.*—That is run by the State.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—How much do the railways take?

*Mr. Venkatanaranappa.*—About 300 tons. In all about 500 tons.

*President.*—What about their castings?

*Mr. Venkatanaranappa.*—They make their own castings.

*President.*—Is there not a sufficient demand in your own territory?

*Mr. Venkatanaranappa.*—Not much, except rice bowls which are imported into Southern India. They are imported at such a low price.

*President.*—What about cast iron water tanks?

*Mr. Venkatanaranappa.*—No. They all build steel tanks. Very little is built out of cast iron. There is very little demand for it. Bombay was one of our very good markets. At one time in spite of the competition from Tatas and Bengal Companies, we sold at one time about 300 tons a month.

*President.*—That is owing to the depression.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—The normal demand would be about 3,000 tons in a year.

*Mr. Venkatanaranappa.*—It should be more. There are so many foundries in Bombay. If they are working to their full capacity, they will take about 10,000 tons.

*President.*—No separate figures are given for cast iron pipes.

*Mr. Venkatanaranappa.*—I know a large quantity of pipes is coming from outside.

*President.*—They may be steel pipes. In 1922-23 the total imports are 9,000 tons for all India and for Bombay about 4,500 tons. That would probably be steel pipes for the Bombay Corporation.

*Mr. Venkatanaranappa.*—Take the case of pig iron and pipes. There is not a large quantity coming in from outside. The quantity that is coming in is helping to reduce the prices considerably. There is always the fear of the import.

*President.*—You cannot interfere with the pipe business, because it really is for irrigation or water supply and it would not be in the public interest to increase the cost.

*Mr. Venkatanaranappa.*—I would not ask for any heavy duty if the pipes were coming at cost price, but I am afraid they are coming at very much lower than the cost price.

*President.*—It is true. That won't go on for ever.

*Mr. Venkatanaranappa.*—It cannot go on for ever. The price will have to rise. The difficulty is to pass over the period of adjustment here. If we can get coke cheap, it would somewhat compensate us. Coke is so costly at Bhadravati.

*Dr. Matthai.*—There is no immediate possibility of your getting coke cheaper.

*Mr. Venkatanaranappa.*—Really freight has to be reduced. We are paying Rs. 24 for coke.

*President.*—If you brought it by sea . . .

*Mr. Venkatanaranappa.*—It would not be very much cheaper. We have got a special freight from Marmagoa provided we bring in lots of 1,000 tons. Apart from the question of handling both at Calcutta and Marmagoa, we cannot get freight for less than Rs. 15 from Calcutta.

*President.*—How far is it from Madras.

*Mr. Venkatanaranappa.*—They have not given us a special freight rate, from Marmagoa. From Madras they refused to give it.

*Dr. Matthai.*—If you take 1,000 tons load, you might get it at Rs. 15 a ton.

*Mr. Venkatanaranappa.*—Yes, to Marmagoa.

*Dr. Matthai.*—That is the sea freight.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—It practically comes to Rs. 25.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Here also there is transshipment.

*Mr. Venkatanaranappa.*—Only at Bangalore. At Calcutta there is one transshipment and there is another transshipment at Marmagoa and the waste and loss at sea is generally higher.

*President.*—There is no doubt about that. Still you cannot avoid transshipments.

*Mr. Venkatanaranappa.*—There is only one transshipment at Bangalore. We have been trying to get Natal coal from Marmagoa. Sometimes it is possible to get it much cheaper. Last year we got a consignment of coal.

*Dr. Matthai.*—When you sell cast iron pipes to Government or other public bodies, do you get the import price?

*Mr. Venkatanaranappa.*—We have got a Stores Purchase Committee. They call for tenders and we have got to quote more or less at prices at which they can get from outsiders. We have the advantage of freight. Government doesn't pay one pie more, because it is their own concern.

*President.*—The whole thing is that you have not got a market.

*Mr. Venkatanaranappa.*—No, for the semi-finished articles.

*President.*—For pig iron you have no market. Even if you came into the pool, you would get 4,000 tons.

*Mr. Venkatanaranappa.*—All these railways we would get.

*Dr. Matthai.*—If you came into the combine, you would get 12,000 tons including the local market.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Probably you would get a much better rate.

*Mr. Venkatanaranappa.*—No. There is the question of scrap which we have always to keep in mind. Scrap is always selling cheap. If we raise the price, this will increase the use of scrap.

*President.*—In that case you will get about Rs. 55.

*Mr. Venkatanaranappa.*—Rs. 52 to Rs. 53 f.o.r. works.

*President.*—As regards 10,000 tons there is no outlet at all.

*Mr. Venkatanaranappa.*—No, unless it is exported or we are going to use it in the manufacture of steel.

*President.*—The steel proposition we may discuss later.

*Dr. Matthai.*—If you look at it this way, supposing you sold 12,000 tons at about Rs. 50, that gives you Rs. 6 lakhs. If you sold 3,500 tons of pig iron for cast iron pipes, say another Rs. 50, that gives you Rs. 1,75,000.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—Between the two you get Rs. 8 lakhs and you cover your operation expenses. Whatever you get in addition will cover your depreciation.

*Mr. Venkatanaranappa.*—Yes.

*President.*—That will barely cover your works cost and depreciation.

*Mr. Venkatanaranappa.*—Yes, as at present. There are some possibilities of improving our works costs.

*President.*—You have taken the estimated cost per ton of pig iron as Rs. 33.

*Mr. Venkatanaranappa.*—I have said somewhere that there is a new process for the manufacture of acetic acid. If that is adopted, we will probably improve the yield from bye-products by Rs. 5 a ton. That is one of the very promising things.

*President.*—What difference would that make to you?

*Mr. Venkatanaranappa.*—That would bring down the pig iron works cost to Rs. 28.

*Dr. Matthai.*—Any way it comes to this if you are able to get an assured Indian market of 12,000 tons, at any rate the possibility of losses on your operation expenses is avoided.

*Mr. Venkatanaranappa.*—Yes, operation and depreciation.

*Dr. Matthai.*—Whatever you are able to sell over and above that will cover depreciation.

*Mr. Venkatanaranappa.*—Yes, that is what we can expect.

*President.*—Then it would be to your advantage if the duty is removed and at the same time the railways buy your pig iron.

*Mr. Venkatanaranappa.*—Yes, it would be to our advantage. If, as I have requested, they buy 15,000 tons at the price at which the East Indian Railway are buying, it would certainly be to our advantage.

*President.*—The price which the East Indian Railway pays you can't get. They pay the port price.

*Mr. Venkatanaranappa.*—Here if they pay port price, it would be all right.

*Dr. Matthai.*—Do you mean Rs. 60 f.o.r. destination.

*Mr. Venkatanaranappa.*—F.o.r. works.

*President.*—Quite true. Leaving that out of account for the moment, the import price may be taken at about Rs. 67 at the ports without duty.

*Mr. Venkatanaranappa.*—We are selling at about that rate in Bombay even with the duty.

*President.*—If the duty is removed and you still got Rs. 67 f.o.r. Bombay, that would give you about Rs. 55 at the works.

*Mr. Venkatanaranappa.*—The railways have an additional advantage of having the railway material rate if they buy 10,000 tons at Rs. 55. They may take it to the North Western Railway which is using a lot of pig iron.

*President.*—North Western Railway is very far away from your works compared to others. Their works are in Lahore.

*Mr. Venkatanaranappa.*—No. We can deliver at Karachi.

*President.*—Still they have to cart it from Karachi.

*Mr. Venkatanaranappa.*—It is their own home line. They need not go out of the way to help us.

*President.*—The one point that I am considering is if this duty is removed, it would pay them to buy your pig iron at Rs. 67 f.o.r. Bombay than to pay a price of Rs. 67 or whatever it is to those other people including the duty. What happens is this. Take the East Indian Railway which is a Government concern. Supposing the East Indian Railway buys 60,000 tons.

*Mr. Venkatanaranappa.*—They buy 60,000 tons.

*President.*—The duty is Rs. 7-8-0 and supposing they pay the whole duty for the sake of argument, that will be about Rs. 4½ lakhs. Government will save Rs. 4½ lakhs on that alone and it will lose perhaps a lakh of rupees if they pay you.

*Mr. Venkatanaranappa.*—If they take 15,000 tons and paid us a little more.

*President.*—That is what it comes to.

*Mr. Venkatanaranappa.*—The East Indian Railway is one of the biggest railway concerns. We are not concerned what use they make of it as long as the advantage is in their favour by buying 15,000 tons from us.

*President.*—They can buy 60,000 or 70,000 tons at a lower rate.

*Mr. Venkatanaranappa.*—I quite see your point.

*President.*—It is for the Government to say, but that is what the figures suggest. A removal of the duty simultaneously with purchase by the Government of a certain quantity of your pig iron at a somewhat higher rate might help you as well as the Government.

*Mr. Venkatanaranappa.*—Yes, and satisfy the people who have asked for the removal of the duty. So far as we are concerned it is all right and possibly even better as you suggest, than the mere retention of the duty.

*President.*—The retention of the duty doesn't help you very much.

*Mr. Venkatanaranappa.*—Not very much at present.

*President.*—But now there is the question of quality. I see from the correspondence that the Madras and Southern Mahratta Railway had reason to complain.

*Mr. Venkatanaranappa.*—Yes, they complained. They had used about 4,000 tons of iron and there was a complaint only about the last consignment.

*President.*—What was the complaint.

*Mr. Venkatanaranappa.*—They said that there was more slag adhering and that our iron was not quite as good as before. What really happened was this. They had very good scrap available in their shop and then they thought that our No. 2 grade would satisfy their requirements. Our No. 2 iron is low in silicon. They tried it and used it successfully for about 3 years. Then their scrap deteriorated. As a matter of fact when they first complained, they sent a letter of their works manager to us and he said that the scrap had been regularly deteriorating and that No. 2 would not do and that they wanted some high silicon iron to be mixed with it. While sending the letter, they said that somehow the iron must have gone bad. But with



the same lot they were apparently satisfied and we did not hear anything more about it. On receipt of the last consignment, however, in May, again they complained. We asked them what the trouble was and offered to go into the matter. In the meanwhile they called for tenders and the Indian Iron and Steel Company quoted Rs. 4 less than ourselves and secured the contract. In this connection it will not be out of place to mention that their shops at Hubli has used about 1,000 tons of our iron. There has never been any complaint from there. On the contrary, the report has been that our iron has given them perfect satisfaction. That is the same kind of iron.

*President.*—That is the only instance in which there has been any complaint.

*Mr. Venkatanaranappa.*—Yes. Of course there have also been one or two very minor complaints. But I want to mention here one point. Each time we began to fight, their complaints about our iron began to increase. The complaints mostly were about the external appearance of our iron.

*Dr. Matthai.*—This complaint was in 1927.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—In 1928, they did not call for tenders at all.

*Mr. Venkatanaranappa.*—As a matter of fact the Agent had in correspondence almost promised to take our iron. By this time there was a change and somehow tenders were not called for. The contract with the Indian Iron and Steel Company was however renewed at the same rate.

*President.*—What was the quantity?

*Mr. Venkatanaranappa.*—1,500 to 1,600 tons. They have in all used about 4,000 tons of our iron.

*President.*—The Madras and Southern Mahratta Railway is a company managed railway and there Government have not got much voice.

*Mr. Venkatanaranappa.*—I don't know if they have not got any voice. In the case of company managed railways, I admit that Government are not as free as in the case of State railways, but still they have great influence over them.

*Dr. Matthai.*—Has there been any complaint from the Great Indian Peninsula Railway?

*Mr. Venkatanaranappa.*—None. They are perfectly satisfied with our iron.

*President.*—Was there any complaint from any other big consumer?

*Mr. Venkatanaranappa.*—No.

*President.*—This complaint from Madras and Southern Mahratta was in respect of a single consignment.

*Mr. Venkatanaranappa.*—Yes. The Great Indian Peninsula Railway on the other hand are saying that our iron is very much better than the Bengal iron.

*Dr. Matthai.*—You have had very good reports from the Bombay, Baroda and Central India Railway.

*Mr. Venkatanaranappa.*—Yes. Once they also complained about a small quantity having slag adhering to it. We removed it and replaced the iron. We are trying to see that the finish of our iron improves in appearance but as regards quality and analysis I don't think that there can be any complaint.

*President.*—What about your exports? Has there been any complaint.

*Mr. Venkatanaranappa.*—There is absolutely none.

*President.*—Do you sell according to specification?

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—As regards the presence of slag in iron, is it only a question of appearance?

*Mr. Venkatanaranappa.*—Some small quantity of slag is adhering to the surface. It ought not to be there. There is another thing also. In America charcoal pig iron is divided into 16 grades according to the silicon and manganese analysis. Here for the sake of simplicity we have only 5 grades. At one time, our selling agents in America wanted us to adopt those 16 grades. But after some time they said that as the customers had been used to the Mysore grading, the old system might continue undisturbed. I can send you these extracts also, if you like.

*President.*—After all, railways are in a position to say.

*Mr. Venkatanaranappa.*—In England also they are using our iron. They are very much satisfied with our iron. From Japan we have had very good reports except in the matter of phosphorus content.

*President.*—On the very first complaint about the quality, the Madras and Southern Mahratta Railway have discontinued placing orders with you.

*Mr. Venkatanaranappa.*—Yes. After all, they have got to be reasonable.

*Dr. Matthai.*—All the iron that you sell in the export market is sold as charcoal iron.

*Mr. Venkatanaranappa.*—Yes, and not in competition with coke iron. As regards the question of complaint, whenever there is a complaint we go into the whole question. We investigate it and take all precautions.

*President.*—Do you exchange the pig iron whenever there is any complaint?

*Mr. Venkatanaranappa.*—Yes, if he is a good customer, instead of fighting with him, we would do it. Sometimes our iron gets mixed up in transshipment. Once we discovered that a wagon which had been consigned to Marmagoa went to Madras and the wagon intended for Madras went to Marmagoa and in the American consignment they had shipped 20 tons of a different grade of iron in a lot of 200 tons. As soon as we detected the mistake we sent a cable and they replied saying that they would be on their guard. When they received the consignment they separated it and thanked us for having intimated them in time. We take all these precautions and yet sometimes mistakes do happen.

#### *Bye-products.*

*President.*—You have got the same trouble about your other bye-products.

*Mr. Venkatanaranappa.*—We are practically exporting all our bye-products. That is not very satisfactory because it gives a low return, but in the present state of the country it cannot be helped.

*President.*—Take for instance the alcohol products.

*Mr. Venkatanaranappa.*—All that goes to England.

*President.*—Take acetate of lime.

*Mr. Venkatanaranappa.*—That is exported mostly to Japan.

*President.*—What is it used for?

*Mr. Venkatanaranappa.*—For the manufacture of acetic acid. The Aravankadu factory can use about 300 tons for manufacturing acetone. But they have taken only 250 tons.

*President.*—This is acetate of lime.

*Mr. Venkatanaranappa.*—Yes. There is a new process to manufacture acetic acid without making acetate of lime. That we will probably adopt very soon.

*Dr. Matthai.*—At present the factory at Aravankadu can take 300 tons.

*Mr. Venkatanaranappa.*—They can. As the synthetic acetone is cheaper, I think they are importing it. At the same time to keep the plant always on operation basis, they are taking a small quantity from us.

*Dr. Matthai.*—That is probably to ensure local supply in time of war.

*Mr. Venkatanaranappa.*—May be.

*Dr. Matthai.*—As far as your acetate of lime is concerned, has there been any complaint?

*Mr. Venkatanaranappa.*—Absolutely none.

*Dr. Matthai.*—Is there any suggestion that the quality has varied?

*Mr. Venkatanaranappa.*—In the very early stages there was a complaint that some of the tar did enter into the acetate of lime and that the colour was not what it used to be with the Armenian product. But I think we have now remedied this defect and there is no complaint. We are selling it in competition with the American product and it is all handled by one firm in America.

*President.*—You manufactured about 1,605 tons last year.

*Mr. Venkatanaranappa.*—Yes, it will go up now.

*President.*—You say that this will bring down the price of pig iron.

*Mr. Venkatanaranappa.*—The bye-products credit of Rs. 20 includes the value acetate of lime. If we make acetic acid direct without making acetate of lime, then that will improve the return by about Rs. 5.

*President.*—How much acetic acid would you be able to produce?

*Mr. Venkatanaranappa.*—About four tons a day.

*President.*—In that case you will have to give up acetate of lime.

*Mr. Venkatanaranappa.*—Not entirely. If anybody wants and if the price justifies, we can make it.

*President.*—If you make 4 tons of acetic acid a day, that would give you how much in a year.

*Mr. Venkatanaranappa.*—1,500 tons a year.

*President.*—That also you will have to export.

*Mr. Venkatanaranappa.*—A small quantity will be consumed in the country and the rest will have to be exported, I think, to Ceylon and Malaya States.

*President.*—What is it used for?

*Mr. Venkatanaranappa.*—In Malaya States they will use it in the rubber industry. It is also used for dyeing. Messrs. Dharamsi Morarji and Company had an idea of putting up a small plant for making acetic acid. But the new process is going to come within two years. There are only two plants, one in Czechoslovakia and another in France which are working this process successfully, and another plant is being set up in America.

*President.*—Does it depend on electricity?

*Mr. Venkatanaranappa.*—No. It only wants steam and one of the tar products creosote will be used as a catalytic agent and the acetic acid will be absorbed direct from the liquor.

*Dr. Matthai.*—If you are going to export to the Malaya States, is not there a question of competition against synthetic acid?

*Mr. Venkatanaranappa.*—The synthetic acid is not so cheap. It is not such a serious competitor as the synthetic acetone or synthetic alcohol.

*Dr. Matthai.*—Taking the value of the whole output, next to pig iron, the most important thing is acetate of lime.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—For that you have a certain market as far as Japan is concerned.

*Mr. Venkatanaranappa.*—We are practically in touch with a firm which really controls the world market for acetate of lime. At first we tried to sell to Japan independently but we eventually found that a combine would be to our advantage, and the firm are very good people. I think that there would be no trouble about the market. Should there be a reduction in the demand, they take care to make an equitable distribution of the market. At present the market is for about 1,000 tons. Later on it will be much more.

*President.*—1,600 tons?

*Mr. Venkatanaranappa.*—About 1,300 tons.

*Dr. Matthai.*—At present, as far as Japan is concerned, it is a sure market for you?

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—Supposing you decided to adopt the direct process, you would be taking a risk?

*Mr. Venkatanaranappa.*—No. The same firm has promised to sell acetic acid. As a matter of fact they are selling all our by-products. It is an American firm and they are exporting from America also to Japan. They have an understanding with the Continental manufacturers of acetate also. So far as acetate is concerned there is a fear that there will be a world shortage of acetate because of the increasing demand for the artificial silk industry, so that we can count on a fairly steady market for that.

*r resident.*—Alcohol products, that is simply methyl alcohol?

*Mr. Venkatanaranappa.*—Methyl alcohol, methyl acetone and denaturing grade methanol. These are the three products. All the three are exported to England at present. We had a contract for 1927; we had a contract for 1928 and it is likely to be renewed for 1929.

*President.*—Is there any demand for these in this country?

*Mr. Venkatanaranappa.*—Very little. But Messrs. Kirloskars are going to take some methanol from us. Before the war methyl alcohol was the recognized denaturant in India for the manufacture of methylated spirits. During the war it became very difficult to secure methanol and the formula was changed. Now we want the Government of India to go back to it, but they refuse to do so because it is on record that there are some aboriginal tribes who would still drink this alcohol.

*President.*—How much would the Government take?

*Mr. Venkatanaranappa.*—If it were adopted as the sole denaturant, it is possible they might take about 30,000 gallons, that is about three months' output.

*President.*—Would it be cheaper than the other?

*Mr. Venkatanaranappa.*—We said we would sell it at the same rate.

*President.*—Will it pay you to do it?

*Mr. Venkatanaranappa.*—It will pay us better than exporting it.

*President.*—This denaturing is done by the Customs Department, is it?

*Mr. Venkatanaranappa.*—It is done by the dealers under the supervision of the Customs Department but the actual denaturant to be used is prescribed by the Government of India. Specially after the competition of synthetic methanol became serious to help the local wood distillers, the United States of America have revised the denaturing specifications wherever it was 5 per cent. methanol they have made it 10 per cent. Here the Government of India have not done anything.

*President.*—What department did you write to?

*Mr. Venkatanaranappa.*—The Central Board of Revenue.

*President.*—What is the exact point involved in it?

*Mr. Venkatanaranappa.*—Before the war they used it and during the war they could not get it, so they changed the formula. We want them to get back to the old formula. The only reason they have assigned is that experience had shown methanol less satisfactory than caoutchoucine in the conditions that prevail in this country.

*President.*—They produce alcohol from methylated spirit?

*Mr. Venkatanaranappa.*—Java spirit, pyridine and caoutchoucine. Instead of caoutchoucine we want them to use methanol.

*Dr. Matthai.*—As far as the Government of India is concerned it makes no difference?

*Mr. Venkatanaranappa.*—No difference except possibly in the administration of their excise. If really a large number of people drink the methylated spirit it won't serve their interests but I don't believe things are as bad as they are represented to be.

*President.*—As far as the denaturing is concerned, it can be done equally effectively whether one formula or the other is adopted?

*Mr. Venkatanaranappa.*—We have literature from America to prove that it is better with methanol. The complaint in America mainly has been that people who have accidentally drunk the denatured spirits died and therefore there are some people there who are trying to have the formulæ revised but the authorities have come to the conclusion that it is not necessary. We can sell the methanol at about Rs. 1-8-0 even in competition with pyridine and caoutchoucine.

*President.*—This denaturing is done at the ports I suppose?

*Mr. Venkatanaranappa.*—Even in the interior.

*President.*—How will you stop this?

*Mr. Venkatanaranappa.*—I think they have got to have bonded depots where they can open these casks. We get Java spirits from Calcutta. Calcutta, Bombay and Madras will be our principal markets.

*President.*—That would give you how much more per gallon?

*Mr. Venkatanaranappa.*—Possibly another 6 annas per gallon. On about 35,000 gallons that is about Rs. 10,000, but apart from the money value of it there is the moral side to the question.

*President.*—The moral side of the question is not very often recognized! In any case this won't help you very much.

*Mr. Venkatanaranappa.*—A good bit will have to be exported at present but it means that it will eventually open up a local market.

*President.*—Is there no possibility of any local industry using this spirit?

*Mr. Venkatanaranappa.*—Cinema films, Celluloid Shellac and Varnish industries can use it. But it will take some time before India starts using this.

*President.*—Is there any means of converting it into motor oil?

*Mr. Venkatanaranappa.*—No. It is costlier than petrol.

*Dr. Matthai.*—Practically, from your point of view this question of direct production of acetic acid is very much more important, is it not? This will bring down your cost of production by about a lakh of rupees.

*Mr. Venkatanaranappa.*—At least a lakh of rupees. I think Rs. 1,40,000 at the lowest. Not much is known about the process and the costs, but my own impression is that our operation costs will not increase.

*President.*—I should have thought that Norway and Sweden were the biggest charcoal producing countries in Europe.

*Mr. Venkatanaranappa.*—This is a development of the Swedish process and is recognized as the most modern process and is called the Swida process after the inventor. As a matter of fact the most authoritative book on wood distillation is by Dr. C. Klar, a German, which has been translated into English.

*President.*—Then this tar, I take it, is locally consumed?

*Mr. Venkatanaranappa.*—We were selling until recently; now we are distilling and making creosote and pitch.

*President.*—Pitch, tar and creosote you have shown separately.

*Mr. Venkatanaranappa.*—For some years we had not been making pitch and it is only recently that we have begun the distillation of tar.

*President.*—After taking out the creosote only 2,500 gallons of tar is left.

*Mr. Venkatanaranappa.*—That was tar sold as such. Hereafter we will use that. The plant you saw the other day came into operation very recently.

*President.*—So that tar would not be a problem any more?

*Mr. Venkatanaranappa.*—No. Pitch will be a problem but there is local sale at a nominal rate of Rs. 30 to Rs. 35 per ton.

*President.*—What do you use the pitch for?

*Mr. Venkatanaranappa.*—It is used in electric installations. We are in correspondence with the Indian Callenders Cable Company at Jamshedpur. But none of these products are creating as much anxiety as pig iron. The progress might be slow but we will slowly develop our sale of all the other products.

*President.*—You call your disinfectant kreso. That is made from creosote, is it not?

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—Supposing you sold your tar as tar or supposing you distilled your tar, does that make any difference?

*Mr. Venkatanaranappa.*—For wood tar as such there is a very small market in India. It is not used for roads. It is not as thick as coal tar. It is being used for painting boats, woodwork and so on.

*Dr. Matthai.*—The products that you get out of this tar are black paint, wood preservative and pitch. Of these three your most valuable product would be wood preservative.

*Mr. Venkatanaranappa.*—Yes, and the Dehra Dun Forest Institute authorities have stated that ours is better than coal tar creosote.

*Mr. Matthai.*—Somebody who was giving evidence before us in some other connection was expressing some doubt as to the relative qualities of coal creosote and wood creosote.

*Mr. Venkatanaranappa.*—We can show you the letter we got from Dehra Dun and they said it was certainly better.

*Dr. Matthai.*—Have you found any difficulty in disposing of your product?

*Mr. Venkatanaranappa.*—The only demand would be from the North Western Railway for sleepers. They have not taken it so far. We have put up a plant and we would absorb all our production.

*President.*—You can treat ordinary jungle wood for building purposes?

*Mr. Venkatanaranappa.*—Yes, and also electric poles, etc.

*President.*—Can you vary your products? Supposing you did not want tar but wanted more creosote. Supposing the wood preservative gave you the best results can you convert the other products?

*Mr. Venkatanaranappa.*—A certain amount of pitch will always be there.

*President.*—Within what limits could you vary the products?

*Mr. Venkatanaranappa.*—We cannot vary it. It is from the pitch that we make black paint.

*President.*—Do you have to compete against the foreign article in these products? I mean your market is more or less local and the local market can absorb your production?

*Mr. Venkatanaranappa.*—Yes.

*President.*—You have got two more retorts?

*Mr. Venkatanaranappa.*—Yes.

*President.*—And that will increase the quantity. Would you be able to absorb that increased quantity?

*Mr. Venkatanaranappa.*—Yes.

*President.*—It would increase the acid and also alcohol?

*Mr. Venkatanaranappa.*—Yes. We had 12 retorts and we will have 4 more. We will have 15 operating against 11.

*President.*—That would give you about 33 per cent. more.

*Mr. Venkatanaranappa.*—Yes. So far as the by-products are concerned, there will be no difficulty. At present we are selling the by-products as rapidly as we make them.

*President.*—Would the increase of 4 more retorts bring down the cost of the other by-products?

*Mr. Venkatanaranappa.*—No. That is given to you in the 1928-29 estimates.

*Dr. Matthai.*—When you give the nett cost as Rs. 33, does that take into account all the increased receipts that you expect to make?

*Mr. Venkatanaranappa.*—Receipts are also given in the estimate itself.

*Dr. Matthai.*—Does that Rs. 33 make allowance for the production of acetic acid?

*Mr. Venkatanaranappa.*—No. That is on the existing basis. Rs. 33 is the estimate. I personally believe that it is possible to work a little cheaper than that.

*President.*—We will come to that.

#### *Raw materials.*

*President.*—Your principal raw materials are the ore and the wood.

*Mr. Venkatanaranappa.*—Yes.

*President.*—They are within a radius of 25 to 30 miles.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—Your limestone is within that area.

*Mr. Venkatanaranappa.*—It is within 10 miles.

*President.*—Those are the principal raw materials. Do you have to use any other imported raw material?

*Mr. Venkatanaranappa.*—Except some in the pipe foundry.

*President.*—I am talking of pig iron.

*Mr. Venkatanaranappa.*—There is nothing at all.

*President.*—In answer to question 34 you have given us the cost of wood as Rs. 5-8-0 per ton delivered at the works and ore is about Rs. 2.

*Mr. Venkatanaranappa.*—Ore was Rs. 2 last year including the ropeway transport.

*President.*—How much is it at the works?

*Mr. Venkatanaranappa.*—It is Rs. 3 delivered at the works. The charges on account of the Mining Superintendent and his staff are included in that.

*President.*—But not depreciation and other things on the ropeway.

*Mr. Venkatanaranappa.*—Nowhere has depreciation been included.

*President.*—Excluding depreciation it is Rs. 3 a ton.

*Mr. Venkatanaranappa.*—Yes.

*President.*—What is your yield?

*Mr. Venkatanaranappa.*—We use about 1'65. That is all ores put together. I am talking only of Kemmengundi ore which is Rs. 3. We use a small quantity of Birur ore which costs about Rs. 5-8-0.

*President.*—I really want to make a comparison between yours and the steel works. Their ore may be taken at 3'7 delivered at the works and they use about 3,600 lbs. per ton. Their yield is about 60 per cent.

*Mr. Venkatanaranappa.*—Ours also varies round about that. The Kemmengundi ore costs Rs. 3 a ton.

*President.*—Is that the principal ore? Do you have to mix any manganese or any other ores?

*Mr. Venkatanaranappa.*—Very small quantities we mix. We have our own manganese mines and we get it at about Rs. 7.

*President.*—Do you use scrap also?

*Mr. Venkatanaranappa.*—No

*President.*—You have given the cost of wood as Rs. 5-8-0 a ton.

*Mr. Venkatanaranappa.*—Yes. Some years it is less and in some years it is more. As a matter of fact what we do in our costs is we charge Rs. 5-8-0. In the beginning of the year we do not know the actual costs and in the end we make the necessary corrections.

*President.*—How many tons do you take in the first instance? The trouble about your fuel is that the quantity of the by-products that you get amounts to a very large percentage.

*Mr. Venkatanaranappa.*—Our Chemical Department is really as big as our pig iron department.

*President.*—What I want to know is how much does your fuel and power cost? They use coke as flux, but you use charcoal.

*Mr. Venkatanaranappa.*—Yes, both as a heating agent and for removing the impurities.

*President.*—Therefore we have got to take the whole of your charcoal as against the coke plus the steam coal which they have to use.

*Mr. Venkatanaranappa.*—In the blast furnace they don't use any other.

*President.*—There are certain items. We have made some comments about that. I will put it this way. How does your charcoal really speaking compare with coke?

*Mr. Venkatanaranappa.*—Our charcoal is better than coke.

*President.*—In price?

*Mr. Venkatanaranappa.*—Coke costs about Rs. 9 to 10.

*Dr. Matthai.*—If their cost of coke is say Rs. 10-8-0 per ton of pig, that corresponds to your Rs. 22 per ton of pig. You use 4½ tons of wood.

*Mr. Venkatanaranappa.*—Yes.

*President.*—They get by-products.

*Mr. Venkatanaranappa.*—It is difficult to get a real comparison.

*President.*—What I will do is this. I take the price of the ore. Then I take the total cost of the pig iron. The difference is spread from the ore to the pig iron.

*Mr. Venkatanaranappa.*—In Jamshedpur they manufacture in such a large scale that their labour and other costs are comparatively small.

*President.*—It is the fuel that would make the difference.

*Mr. Venkatanaranappa.*—Fuel makes a large difference.

*President.*—I think it is better to take your cost sheets. Which is your best month to take in 1928?

*Mr. Venkatanaranappa.*—January would be the best month to take. In the cost sheets you have got all the furnace costs.

*President.*—The whole point is this that charcoal pig iron is really more costly to produce.

*Mr. Venkatanaranappa.*—Yes, because of the charcoal cost.

*President.*—The other reason is that it is always produced on a smaller scale.

*Mr. Venkatanaranappa.*—Yes.

*President.*—We have got to try and understand how each one affects the cost. Can you give us some idea by which we can really find out in terms of fuel or coal at what disadvantage you are compared with Tatas?

*Mr. Venkatanaranappa.*—You take the January cost sheets.

*President.*—This is the furnace sheet.

*Mr. Venkatanaranappa.*—Yes. You will see that the charcoal has been charged at Rs. 30.

*President.*—But there Rs. 30 is the gross.



*Mr. Venkatanaranappa.*—On the retort sheet you will see that the total charges at the retorts have been Rs. 56,000 including overhead and we have taken charcoal at Rs. 30 and charged Rs. 4,000 to the by-products of the chemical plant.

*President.*—That is the cost of working.

*Mr. Venkatanaranappa.*—The cost at this particular stage is Rs. 56,000 of which Rs. 52,000 have been taken as the price of charcoal and Rs. 4,000 as the price of liquor.

*President.*—That gives you Rs. 30 a ton.

*Mr. Venkatanaranappa.*—Yes. Even out of that Rs. 30, you can deduct any profit that we have made in the chemical plant.

*President.*—How can we find that out?

*Mr. Venkatanaranappa.*—Please see page 8. The total charges for the month are Rs. 24,000, but the value of the products made at the approximate market rates is Rs. 35,000. So we have got Rs. 11,000 roughly.

*President.*—That is the excess over the cost of the chemical plant.

*Mr. Venkatanaranappa.*—Yes. So we have got to give credit for Rs. 11,000.

*President.*—For how many tons?

*Mr. Venkatanaranappa.*—1,740 tons.

*President.*—That amounts to how much?

*Mr. Venkatanaranappa.*—About Rs. 6.

*President.*—That reduces the price of charcoal from Rs. 30 to Rs. 24.

*Mr. Venkatanaranappa.*—Yes.

*President.*—What I want to know is how much charcoal you have got to use to get one ton of pig?

*Mr. Venkatanaranappa.*—Roughly about a ton.

*President.*—I take it that you use your gases.

*Mr. Venkatanaranappa.*—Yes, under the boilers.

*President.*—How do you operate the blast furnace?

*Mr. Venkatanaranappa.*—The cost of steam is charged. The blowing engine is run by steam and its cost is charged.

*President.*—That is how much per ton?

*Mr. Venkatanaranappa.*—Roughly four rupees.

*President.*—Your production was 1,534 tons.

*Mr. Venkatanaranappa.*—Yes.

*President.*—For that steam you use charcoal.

*Mr. Venkatanaranappa.*—Blast furnace gas and wood.

*President.*—Mixed together.

*Mr. Venkatanaranappa.*—Yes, and in the end we give credit for the gas at the rate at which we give credit for wood.

*President.*—What do you do with your gas?

*Mr. Venkatanaranappa.*—We turn a portion under the furnace.

*President.*—In the blast furnace what do you use?

*Mr. Venkatanaranappa.*—The gases that come from charcoal in the furnace will be used partly for heating the stoves and the surplus gas goes to the boilers.

*President.*—For what?

*Mr. Venkatanaranappa.*—For generating steam,

*Dr. Matthai.*—May we take the charcoal cost per ton of pig as Rs. 24?

*Mr. Venkatanaranappa.*—Yes, in that particular month. Now it will be less.

*President.*—Whereas the cost of coke which the other people use is just under Rs. 11.

*Mr. Venkatanaranappa.*—Therefore our cost goes up by Rs. 13 odd. Then there is labour.

*President.*—That works out to how much?

*Mr. Venkatanaranappa.*—Less than Rs. 3. At Jamshedpur it must be Re. 1 or so.

*Dr. Matthai.*—It is Rs. 1½. In 1927-28, you give works labour as Rs. 10.

*Mr. Venkatanaranappa.*—This is only for the furnace and the other labour comes under the indirect charge—overhead.

*President.*—Can you convert this into cost per ton?

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—What was your total works cost in January, 1928?

*Mr. Venkatanaranappa.*—Rs. 46.

*Dr. Matthai.*—Is that the nett cost?

*Mr. Venkatanaranappa.*—Yes, in that month.

*President.*—I should like to take the costs as you have given them.

*Dr. Matthai.*—There is a small point which I want to ask you. The charcoal pig that you sell in the export market in America, what kind of price does it fetch in America compared with the charcoal pig in America?

*Mr. Venkatanaranappa.*—Much the same price.

*Dr. Matthai.*—American charcoal is 10 shillings below the Swedish pig?

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—Do you get the same price as the American pig?

*Mr. Venkatanaranappa.*—Yes, practically there is very little difference except that phosphorus in the American pig is slightly higher than that in our pig.

*President.*—Then, yours will be considered better.

*Mr. Venkatanaranappa.*—From that point of view it is better. It is intermediate between the American and Swedish pig.

*President.*—You ought to get more than Rs. 40 *ex works*.

*Mr. Venkatanaranappa.*—We sell at 24 dollars after duty paid. That only nets us Rs. 40.

*President.*—In Japan do you get more?

*Mr. Venkatanaranappa.*—Yes. But of course our sales are on f.o.b. Marmagoa basis.

*President.*—Which local people?

*Mr. Venkatanaranappa.*—The Japanese firms in Bombay. They buy it outright from us and export it. They have got special freight contracts.

*President.*—You cannot sell more to them.

*Mr. Venkatanaranappa.*—We are trying but it is difficult.

*Dr. Matthai.*—They are buying charcoal pig.

*Mr. Venkatanaranappa.*—Yes, they are also buying coke pig from Calcutta.

*Dr. Matthai.*—Yours is sold as charcoal pig in Japan, is it not?

*Mr. Venkatanaranappa.*—Yes.

*President.*—You get Rs. 10 more.

*Mr. Venkatanaranappa.*—We get f.o.b. Marmagoa about Rs. 58 to 59 depending upon the quantities and I think they are getting at f.o.b. Calcutta about Rs. 46 or 48. The freight from Calcutta to Japan is lower than that from Marmagoa to Japan, so that they really give us Rs. 15 more but they take very small quantities—about 1,000 to 1,500 tons a year.

*President.*—I suppose that they find difficulty in getting freight.

*Mr. Venkatanaranappa.*—They don't want to pay a much higher price for charcoal iron unless the phosphorus content is lower. They want to use it only as a special charcoal iron and not as coke iron. If we want them to take it in competition with coke iron, we will have to reduce our price considerably.

*Dr. Matthai.*—You mean on account of freight?

*Mr. Venkatanaranappa.*—Yes.

*President.*—What I am trying to suggest is that you start with a tremendous disadvantage compared with the coke pig iron. Your raw materials come to about Rs. 44.

*Mr. Venkatanaranappa.*—That is including wood burnt under boilers.

*Dr. Matthai.*—If you deduct from the cost of raw materials the cost of charcoal, you get the other raw materials, don't you?

*Mr. Venkatanaranappa.*—I don't follow you.

*Dr. Matthai.*—Let me put it this way. You require 4½ tons of wood per ton of pig.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—4½ multiplied by 5½ gives you Rs. 25.

*Mr. Venkatanaranappa.*—It will come to Rs. 24.75.

*Dr. Matthai.*—Deduct that from Rs. 43.79 and you get the cost of ore and limestone.

*President.*—In Form II that you have submitted, you have given the nett cost as Rs. 45.64.

*Mr. Venkatanaranappa.*—That is for 1927-28.

*President.*—But you have deducted already Rs. 9.09.

*Mr. Venkatanaranappa.*—That is not the by-product revenue but the overhead and general charges, value of steam, power and water debitable to subsidiary plants such as pipe refinery, alcohol refinery and tar distillation plant which we treat as separate.

*Dr. Matthai.*—That is, 20.94 represents the credit due to alcohol.

*Mr. Venkatanaranappa.*—Yes, and nothing else.

*President.*—That figure of Rs. 9.09 is a sort of arbitrary figure.

*Mr. Venkatanaranappa.*—No. So far as steam, water and power are concerned, these have been calculated. Only overhead is arbitrary.

*President.*—Would it not be better for you to take the gross cost?

*Mr. Venkatanaranappa.*—In that case, how will you include pipe foundry?

*President.*—To-day you are really treating it as pig iron.

*Mr. Venkatanaranappa.*—The casting in the pipe foundry we are treating separately. We charge pig iron at certain rate.

*President.*—It does not really show what you are doing as regards the whole business.

*Mr. Venkatanaranappa.*—This would be the correct cost. Supposing there were no extensions. Let us for a moment imagine that we had no pipe foundry or alcohol refinery plant or any of these things.

*President.*—It would be really like Tata's. They make sulphate of ammonia.

*Mr. Venkatanaranappa.*—That is all right. That comes in as a sort of by-product. What they do is simply this. They take the gross costs. Those gross costs are included in the works costs. When they sell the by-product they credit the whole thing to the works.

*Mr. Venkatanaranappa.*—We can do that but then the whole trouble will come in respect of the pipe foundry.

*President.*—I am not disputing that. It is necessary for you to have separate accounts for your various products but so far as business is con-

cerned don't you think it would be better to have the thing treated as a whole? Your pipe foundry is very much like Tata's sulphate of ammonia plant. In principle I see no difference between the two.

*Mr. Venkatanaranappa.*—I think it is better to keep the costs separate.

*President.*—I am not disputing that.

*Mr. Venkatanaranappa.*—For a review of the position as you want it, you want that to be included, but that won't give you a fair view of the position. Supposing in one year we made 3,000 tons and in another year reduced it to 1,000 tons, that won't give you any correct information at all.

*President.*—If you reduce the quantity of pipes you will have more pig iron.

*Mr. Venkatanaranappa.*—Including the whole costs won't give you a separate idea at all.

*Dr. Matthai.*—You mean as far as the cost of pig iron is concerned?

*Mr. Venkatanaranappa.*—Or even as far as the cost of by-products is concerned.

*President.*—What I want to know is this. For my purposes I want to get your total costs under all the different headings.

*Mr. Venkatanaranappa.*—That of course I will give you and I will also work out separate figures for the month of January for each department.

*Dr. Matthai.*—Speaking roughly, the present position is that you are making a profit on refined alcohol products but you are probably losing on cast iron pipes.

*Mr. Venkatanaranappa.*—We are losing on cast iron pipes just at present. We made some money last year. It paid depreciation and interest and there was a little margin. The object of our going in for the refinery is not only to enable us to sell the product but also to make some little money. As a matter of fact the alcohol refinery and the tar plant between themselves have cost about Rs. 4 lakhs. Their operation charges are very little.

*President.*—You work them entirely as separate units?

*Mr. Venkatanaranappa.*—Yes, except that the overhead charges are the same while electricity, steam and water charges are on the basis of actual consumption. It has helped to reduce the cost of the main plant to this extent that the cost of electricity, steam, overhead and other charges have been spread over a bigger field.

*President.*—Take your Form No. I. I want the total cost of the pig iron as such; that is without taking other by-products.

*Mr. Venkatanaranappa.*—That is Rs. 11,43,156. You want even the pipe foundry charges to be included?

*President.*—This is what we did in the case of steel. We got the total works cost, whatever it was, say Rs. 6 crores. Then they have sulphate of ammonia or tar, all the by-products, and surplus pig iron also which came to about Rs. 2 crores, so that Rs. 4 crores was left. Then we said the total production of steel in that year was, say, 400,000 tons, therefore the loss of steel per ton on an average was Rs. 100. That would give me an idea of what the actual position is. If you charge the market price to the foundry, no question will arise. You will simply say 'we sell so much pig iron to the foundry'.

*Mr. Venkatanaranappa.*—That is what we are doing at present.

*President.*—The trouble is this that the pipe foundry uses pig iron; besides that it uses part of your steam, water and electricity. That you allocate merely?

*Mr. Venkatanaranappa.*—Yes, and prepare separate cost sheet for the pipe foundry.

*President.*—Your main product really is pig iron but for the pig iron you won't have any other thing. Therefore the pig iron has got to bear the

loss and share the profits. If you will kindly prepare it on that basis it will give us some idea.

*Mr. Venkatanaranappa.*—For what year do you want that statement?

*President.*—I want the actuals for 1927-28 and also your estimate for 1929-30.

*Mr. Venkatanaranappa.*—We will do that. We will have to value the pipes at a certain price in the market for that particular year.

*President.*—You have got the actuals for 1927-28.

*Mr. Venkatanaranappa.*—There will be some stock left.

*President.*—You can take the stock at realized prices.

*Mr. Venkatanaranappa.*—I will work that out for you. But that won't hold good to-day because our actual realized prices are slightly higher, but as regards that year it will be all right.

*Mr. Venkatanaranappa.*—I will try to make it as accurate as possible and where I have made any assumptions I will note that in the statement.

*President.*—When we have got that the whole of the depreciation and profit and everything have to be added on to the pig iron.

*Mr. Venkatanaranappa.*—I may tell you that Rs. 33 in the statement will not be affected, not by more than a rupee.

*President.*—I want you to give the estimate for 1929-30 in the same form as I have asked you to give in my form (Tata's statement on page 239 of Vol. II of evidence in the Steel Enquiry) to enable me to bring the figures into line and make a comparison.

*Mr. Venkatanaranappa.*—I will do that.

*President.*—It will be necessary to examine you afterwards. It may be at the end of April. The whole position is this that you will only be affected if the duty is removed. You are in no hurry.

*Mr. Venkatanaranappa.*—If we are going to get something out of these recommendations, I should like to get them earlier.

*President.*—Just now we are considering merely the removal of the duty.

*Mr. Venkatanaranappa.*—As we discussed in the morning, if it is going to be of any use to the Iron Works, I should like it published as early as possible. Of course it all depends on your other engagements.

*President.*—I think the question of costs will have to stand over anyhow until to-morrow.

*Mr. Venkatanaranappa.*—I shall give you the statement to-morrow.

*President.*—I want to ask you a few questions about freight. How is pig iron classified?

*Mr. Venkatanaranappa.*—The Madras and Southern Mahratta Railway have classed it as second class. They have given us special rates from Bhadravati station to station rates.

*President.*—What difference does it make to you?

*Mr. Venkatanaranappa.*—It makes a considerable difference. I think the second class rate is '42 pies per mile and they have given us 1/6th to 1/7th pie.

*President.*—That is irrespective of distance.

*Mr. Venkatanaranappa.*—What they do is they give station to station rates.

*President.*—That means distance doesn't matter.

*Mr. Venkatanaranappa.*—It does matter. It is based on the distance. The second class rate is '42 per mile and the rate they haven given us works out to '15 per mile.

*President.*—It is about half.

*Mr. Venkatanaranappa.*—It is less than half. It is about 1/3rd.

*President.*—That is what the Madras and Southern Mahratta Railway have given.

*Mr. Venkatanaranappa.*—Yes, because all our products are carried on their railway and the Mysore Railways.

*President.*—Practically you will get it as far as Poona.

*Mr. Venkatanaranappa.*—Yes, Guntakal and Madras.

*President.*—The Great Indian Peninsula Railway doesn't give anything.

*Mr. Venkatanaranappa.*—No, because it is a very small section from Poona to Bombay.

*President.*—I suppose they charge a higher rate, because the distance is short.

*Mr. Venkatanaranappa.*—Yes, but that is only for pig iron. For alcohol they have given a lower rate, but higher than this.

*President.*—That is for export.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Then as regards the number of men employed, you have got 1,500 men.

*Mr. Venkatanaranappa.*—Yes, that is including tramways, construction and everything.

*President.*—Is not that a large number?

*Mr. Venkatanaranappa.*—It includes construction also.

*President.*—What construction?

*Mr. Venkatanaranappa.*—Retort construction, blast furnace, reconstruction and everything. Our operation labour is only about 800 including pipe foundry in the central factory. 1,500 includes tramways also.

*President.*—It does seem rather a large number.

*Mr. Venkatanaranappa.*—If you want I will give you the distribution. I think we have cut down the labour to the absolute minimum.

*Dr. Matthai.*—Taking your chief technical men, what is the sort of training and experience that they have had?

*Mr. Venkatanaranappa.*—Mr. Ganesa Iyer is the Chief Mechanical Engineer that we have. He is a local graduate of the Madras Engineering College.

*Dr. Matthai.*—What is his practical experience?

*Mr. Venkatanaranappa.*—He was working on the Kannambadi dam as Mechanical Engineer and then in the Central Industrial Workshops at Bangalore. He had been to Europe twice for studying in the various factories.

*Dr. Matthai.*—In connection with the Steel Works?

*Mr. Venkatanaranappa.*—Once he was deputed by Government when he was in the Central Industrial Workshops, Bangalore. We sent him once again in connection with pipe foundry purchase and some other questions. He toured over the whole of Europe, America and other places, studying industrial conditions and industrial work. He is an M.I.M.E.

*Dr. Matthai.*—He is the Engineer.

*Mr. Venkatanaranappa.*—He is the Chief Mechanical Engineer. Then there is Mr. Viswanath who is practically the next man. He is a Mysore Engineering College Graduate. He was in charge of our blast furnace operations and he has been recently to Europe in connection with our pipe foundry project and has made a study of the steel question.

*Dr. Matthai.*—How long was he abroad?

*Mr. Venkatanaranappa.*—For about 8 to 9 months. Then we have in the pipe foundry one Mr. P. Krishna Rao who was working both in Jamshedpur and Bengal for some time and who was in the Central Industrial Workshop at Bangalore.

*Dr. Matthai.*—Practically, taking the 4 or 5 men holding responsible positions, their actual experience of iron works is confined to Bhadravati.

*Mr. Venkatanaranappa.*—Yes, except to the extent that they have seen some works outside.

*Dr. Matthai.*—Except that they have travelled abroad.

*Mr. Venkatanaranappa.*—Yes.

*President.*—In answer to Question 35 you have given the cost of electricity per k. w. h. as 1-16 anna.

*Mr. Venkatanaranappa.*—Yes. That is taking our steam and all those charges. Of course we produce such a small quantity. In reply to my previous question I may add that one of our men was trained in the Jamshedpur Technical Institute.

*Dr. Matthai.*—What position is he holding now?

*Mr. Venkatanaranappa.*—He is operating the converter and the electric furnace.

*President.*—You say you use 85 k.w.h. per ton of iron produced.

*Mr. Venkatanaranappa.*—That is including by-products.

*President.*—For what purpose electricity is used in your works?

*Mr. Venkatanaranappa.*—Generally for driving cranes and in the hoist house furnace which you saw electrically operated. In the tunnel the cars are run by electricity.

*President.*—It is a large item which comes to about Rs. 6.

*Mr. Venkatanaranappa.*—We can take the furnace cost of the machine. I don't think it is used only for the furnace, because electricity debited to furnace is Rs. 14 a month.

*President.*—I think that is only allocation.

*Mr. Venkatanaranappa.*—Allocation is based upon the consumption of electricity.

*President.*—You actually meter it.

*Mr. Venkatanaranappa.*—Yes. This 85 is the total production given on that basis.

*President.*—Was this electricity necessary?

*Mr. Venkatanaranappa.*—Otherwise the hoist house operation will have to be done by hand.

*President.*—What I mean to say is that Rs. 6 a ton is a large item.

*Mr. Venkatanaranappa.*—A number of chemical pumps is to be driven by electricity.

*President.*—You are taking things on a small scale. What I am suggesting to you is, whether you use steam or electricity, unless electricity is produced on a large scale, it is costly.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Rs. 6 a ton means Rs. 2 lakhs on your total production.

*Mr. Venkatanaranappa.*—Even steam would have cost us some money.

*President.*—It might be cheaper.

*Mr. Venkatanaranappa.*—No, it cannot be cheaper. If you were to take the steam line all over the place, the losses would be very heavy.

*President.*—I do not know.

*Mr. Venkatanaranappa.*—I think in a plant like this, this is more economical. We have got cranes to operate. I don't think it will be possible to manage the plant without electricity. I mean the number of pumps that we have in the chemical plant, then we have cranes and we want lighting for 24 hours' work.

*President.*—What is the unit rate from Sivasamudram?

*Mr. Venkatanaranappa.*—I think the Mysore Government are selling to the Kolar Goldfields at £10 per horse power. It comes to Rs. 135 or 4 pies per unit.

*President.*—That would save you about Rs. 1½ lakhs.

*Mr. Venkatanaranappa.*—It would practically save all the wood that we are burning under the boilers. We would generate enough steam from the furnace gas to take care of the blowing engine and the chemical plant where steam is required.

*President.*—This is equal to how many k.w. a year?

*Mr. Venkatanaranappa.*—It is really 200 h.p. At £10, it comes to Rs. 27,000.

*President.*—In place of the present Rs. 1,70,000.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Rs. 1,70,000 include the overhead.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Does it include depreciation?

*Mr. Venkatanaranappa.*—No.

*President.*—Sivasamudram current would cover depreciation and everything else.

*Mr. Venkatanaranappa.*—Yes.

*President.*—What is the total quantity of current sold by Sivasamudram in a year?

*Mr. Venkatanaranappa.*—I think they are at present selling 30,000 horse power. Their total capacity is 40,000, but I think they are generating only 30,000 horse power.

*Dr. Matthai.*—4 pies per unit is the minimum in India. You cannot have it lower than that.

*Mr. Venkatanaranappa.*—If we had it at Jog, we ought to get at Rs. 100 a horse power.

*President.*—You cannot have an hydro-electric works for 200 horse power.

*Mr. Venkatanaranappa.*—We are thinking of making steel.

*President.*—Steel is different.

*Mr. Venkatanaranappa.*—Without steel we can't think of hydro-electric power at Jog.

*President.*—What I mean is apart from steel, if there was any scope for hydro-electric power, it would bring down your cost of pig iron.

*Mr. Venkatanaranappa.*—There is no possibility near Bhadravati unless it is Jog. It is impossible even to carry from Sivasamudram such a small horse power as 200.

*President.*—That is, how many miles?

*Mr. Venkatanaranappa.*—About 200 miles. They are going to generate 40,000 horse power at Krishnarajasagara.

*President.*—Where is that place?

*Mr. Venkatanaranappa.*—At Kannambadi reservoir.

*President.*—That is a long lead.

*Mr. Venkatanaranappa.*—Yes. Even then we can get 10,000 horse power but not 200. This is the rate at which they are actually selling to the Kolar Goldfields, but the actual cost is different. If we are going to generate electricity at Jog near Bhadravati, then the actual cost will be much lower.

*President.*—Where are the Kolar Goldfields situated?

*Mr. Venkatanaranappa.*—80 or 90 miles from Sivasamudram.

*President.*—How far are they from Jog?

*Mr. Venkatanaranappa.*—Very far away. Jog is really the north-western corner of Mysore.



*President.*—Kolar Goldfields are about the middle.

*Mr. Venkatanaranappa.*—It is on the north-east corner of Mysore.

*President.*—In answer to Question 42 you have given the tonnage and the rates, are these f.o.r. works or destination for pig iron?

*Mr. Venkatanaranappa.*—Those are gross rates and not nett rates.

*Dr. Matthai.*—As far as pipes are concerned, Rs. 150 seems to me to be your nett rate in 1927.

*Mr. Venkatanaranappa.*—Even that is gross. Practically freight was very small—about Rs. 3 I think.

*President.*—You have not given nett rates anywhere for the whole output.

*Mr. Venkatanaranappa.*—I think we have given in one place—page 20 in answer to question 46.

*President.*—Are those rates f.o.r. works?

*Mr. Venkatanaranappa.*—Yes.

*President.*—Can you give us the average realised prices in India for the various products and also the average prices for export and the average of the two? You can send those figures afterwards.

*Mr. Venkatanaranappa.*—Yes.

*President.*—We just want to ascertain how much goes away in freight. Will you give us your gross realized prices for sales in India and the gross prices for export, so that we know exactly what happens?

*Mr. Venkatanaranappa.*—Yes.

*President.*—In answer to Question 47, you talk about dumping. Dr. Matthai has already pointed out that it is not dumping.

*Mr. Venkatanaranappa.*—I know you have an aversion for the word "dumping".

*President.*—Have you had any disagreement with the combine?

*Mr. Venkatanaranappa.*—We have never been in touch with them at all.

*President.*—Now you have started this business.

*Mr. Venkatanaranappa.*—So far as this is concerned, they have a local firm representing them in Madras, and they were very much upset by our getting Madras and Southern Mahratta order continuously for about three years.

*President.*—I am talking of the Indian Iron and Steel Company.

*Mr. Venkatanaranappa.*—They are the agents of the Indian Iron and Steel Company also.

*President.*—Do you think that your going in for a pipe foundry might have something to do with that?

*Mr. Venkatanaranappa.*—Might have. I suppose nobody would like competition.

*President.*—You have not answered question 54 about railway rates.

*Mr. Venkatanaranappa.*—We have no information.

*President.*—You might have given us some illustrations.

*Mr. Venkatanaranappa.*—I shall do so. What are the places you would like to have?

*President.*—That is for you.

*Mr. Venkatanaranappa.*—We can give freights from Bhadravati.

*President.*—I think you have given us the Indian Iron and Steel Company's freights.

*Mr. Venkatanaranappa.*—Those are at the railway material rate. I shall give you a statement on that to-morrow.

*President.*—As regards the block value given in answer to question 66, in the books your block stands at Rs. 194.71 lakhs.

*Mr. Venkatanaranappa.*—Yes.

*President.*—In one of the pamphlets you have given us I see that you value it at Rs. 1,07 lakhs.

*Mr. Venkatanaranappa.*—Yes, including the extension, pipe foundry, alcohol refinery, plant, etc. I also gave you a copy of the note which we had submitted to our Government.

*President.*—In round figures, it may be taken at a crore.

*Mr. Venkatanaranappa.*—Yes.

*President.*—As regards depreciation you have taken about 2 per cent.

*Mr. Venkatanaranappa.*—3 per cent.

*President.*—3 per cent. you will probably find is not sufficient.

*Mr. Venkatanaranappa.*—For mere depreciation that is sufficient.

*President.*—No, I will tell you why. Now we have got an actual instance. Take the Tata Iron and Steel Company's original plant. Practically the whole of that is scrapped or is going to be scrapped in less than 16 years except land.

*Mr. Venkatanaranappa.*—Not the furnaces?

*President.*—Furnaces have practically all been rebuilt. What I mean to say is that very little remains of the old rolling mills. The boilers have all gone. Some of the coke ovens have been pulled down.

*Mr. Venkatanaranappa.*—They had to pull down their boilers because I believe the Inspector took objection to them.

*President.*—If you use a steel plant for 16 years, even if it is not worn out, it will be obsolete.

*Mr. Venkatanaranappa.*—For obsolescence we have to provide more.

*President.*—Obsolescence must be taken into account: otherwise your works cost will go up.

*Mr. Venkatanaranappa.*—Taking that, we want 6½ per cent.—possibly a little less—because the tramways are also there.

*President.*—Taking the whole?

*Mr. Venkatanaranappa.*—Five per cent. would be reasonable, because the annual maintenance charges we charge to the operation cost.

*President.*—They also do the same. Take even the Greater Extensions of theirs. There also they are beginning to find that some of the things are obsolete.

*Mr. Venkatanaranappa.*—The world is moving so fast that nothing is permanent.

*President.*—There is such a lot of wear and tear. The furnaces are used for 24 hours.

*Mr. Venkatanaranappa.*—The structure itself lasts a long time. There is a repair fund also. In Bhadravati we also want to scrap the furnace itself, should sponge iron be a success.

*President.*—There you are. Therefore you must allow some amount for obsolescence.

*Mr. Venkatanaranappa.*—3 per cent. is only for mere depreciation without taking into account obsolescence.

*President.*—We include obsolescence and that is why we allow 6½ per cent.

*Mr. Venkatanaranappa.*—In that case we might take 6½ per cent. In the statement we have prepared for steel, we have allowed 6½ per cent.

*Dr. Matthai.*—If you allow 5 per cent. for depreciation and 5 per cent. for profit on a capitalisation of Rs. 1 crore, then to your revised estimate of Rs. 33 will have to be added another Rs. 30.

*Mr. Venkatanaranappa.*—Yes. We have no hope of getting any profit on the main plant. I quite see that, but I had in mind depreciation without obsolescence and our idea was that if anything was left over, it should be funded.

*President.*—I think you would be well advised to allow yourselves at least 6½ per cent. in all estimates that you make because you will find that the plant even might not last, for 16 years even, allowing for obsolescence.

*Mr. Venkatanaranappa.*—But that will have to come in from the surplus-earned.

*President.*—Take your working capital.

*Mr. Venkatanaranappa.*—Yes, it has gone up, but that is because our pig iron sales are not brisk.

*President.*—In 1928 nearly 20 lakhs.

*Mr. Venkatanaranappa.*—It must be said that in the earlier years we had very great trouble with the plant and sales did not receive much attention. Our total working capital is about Rs. 30 lakhs. This heavy working capital has been due to the difficulty in selling pig iron. Then there have also been other factors. In the earlier years prices were steadily falling and we rather hesitated to export at a lower price and we always hoped to have a better market and accumulated stocks but latterly we have been showing no hesitation to sell.

*President.*—Your working capital is really out of all proportion to the annual expenditure. It is twice the amount of your total works cost.

*Mr. Venkatanaranappa.*—At present it is. Our aim is to reduce it to Rs. 20 lakhs. We have really one year's stock of pig iron.

*President.*—What do you estimate it at? Ordinarily it is six months turnover.

*Mr. Venkatanaranappa.*—Six months won't do because we must have six months raw materials and six months stock of finished products. I think one year is necessary.

*President.*—One year would be about Rs. 12 lakhs.

*Mr. Venkatanaranappa.*—Taking pipe foundry and everything it will be about Rs. 18 to 20 lakhs. We will not be able to reduce it below 15 in any case.

*President.*—We have seldom allowed more than six months turnover.

*Mr. Venkatanaranappa.*—Here we have to season the wood and then we have got monsoon conditions when no work is possible, from July to October, in the way of bringing the ore or cutting wood.

*President.*—It is a large sum of money locked up.

*Mr. Venkatanaranappa.*—So far as raw materials are concerned we must have that stock.

*President.*—This stock of finished goods Rs. 20 lakhs is too much, it is about 20,000 tons.

*Mr. Venkatanaranappa.*—I admit that. I will give you details.

*President.*—Does that include stocks of other things?

*Mr. Venkatanaranappa.*—We have large stocks of pig iron and pipes. That ought to be reduced by about Rs. 10 lakhs.

*President.*—That would be about right.

*Mr. Venkatanaranappa.*—We are trying to reduce that. As I said the whole trouble has been that we have not sold pig iron as rapidly as we produced.

*Dr. Matthai.*—That has been so from the very beginning?

*Mr. Venkatanaranappa.*—Yes. Our works cost was at the beginning, say, Rs. 100 per ton and pig iron was selling at that price. As we reduced the costs the price of pig iron also fell until about a year ago.

*Dr. Matthai.*—Since you have definite arrangements with these export people that they would take your pig iron, is there any reason for accumulating stocks?

*Mr. Venkatanaranappa.*—America cannot absorb more unless we reduce the price very much and that they don't advise. They say we will spoil the

market for the future. There are a number of firms doing business in this more or less regularly now and we cannot increase the sales.

*President.*—In answer to question 97 you talk of the manufacture of iron and steel as a very common village industry even so late as 25 years ago in Mysore. What do you mean?

*Mr. Venkatanaranappa.*—I am talking of iron made by the crucible process.

*President.*—That is how you discovered the ore?

*Mr. Venkatanaranappa.*—No. The existence of the ore was widely known. They used to make small earthen crucibles and made steel.

*Dr. Matthai.*—As regards the sales to the Great Indian Peninsula Railway, there were about 400 tons which you tendered for delivery at Jhansi, and for which your quotation was distinctly lower than Burn's quotation. It was not a question of quality, was it?

*Mr. Venkatanaranappa.*—No. On the total price ours was more by Rs. 2 a ton.

#### *Manufacture of steel.*

*President.*—As regards this steel project of yours there are one or two general points. First of all you have not yet found really what process you are going to adopt.

*Mr. Venkatanaranappa.*—With any other process there is very little scope for development. Now we have most definitely decided to adopt the electric process because that is the only process with which we can expand the output.

*President.*—Unless somebody had tried this process on this class of pig iron we can't express any opinion on it.

*Mr. Venkatanaranappa.*—From what we have been advised, our opinion is that that is the only thing to do at Bhadravati. We are carrying on some experiments at Bhadravati and I hope we will be able to give you some data very soon.

*President.*—That does not take you far enough. Even after you have really got the steel in the ingot the question would arise whether it would pay you to roll it.

*Mr. Venkatanaranappa.*—We will have to concentrate on the superior grades of steel to the extent to which we can find a market and for the surplus we will make ordinary grades.

*President.*—First of all you have got to consider what your unit is going to be. You can produce only 30,000 tons of pig iron, is it not so?

*Mr. Venkatanaranappa.*—Yes.

*President.*—You don't want to convert the whole of that into steel?

*Mr. Venkatanaranappa.*—If it pays us why not?

*President.*—That is the whole point.

*Mr. Venkatanaranappa.*—We have a local market. Taking only the bazar grade 30,000 tons is easy to dispose of in Mysore and surrounding places. In Bangalore they consume about 10,000 tons for cart tyres and another 10,000 for window bars and other small sections.

*President.*—But 20,000 tons of steel, that is not a very good unit. I am speaking to you generally. Of course I have not examined the thing in detail. But looking at it from a commonsense point of view, the whole question is this. There are two things absolutely essential: first, that you must get your pig iron in the molten state and secondly, that must synchronize with the electric furnace and it is doubtful whether you can do that with one electric furnace. Your pig iron would be produced at the rate of 70 to 80 tons and even if you used up the whole it would not keep even the smallest rolling mill busy for 24 hours.

*Mr. Venkatanaranappa.*—The smallest has a capacity of 10,000 tons.

*President.*—I am talking of the blooming mill. The trouble is to balance the plant. Your pig iron plant is 80 tons a day. You have got to produce pig iron in such a way that it gets ready for the steel furnace as it is required.

*Mr. Venkatanaranappa.*—We will have an intermediate storage.

*President.*—That means extra cost. Not only that: unless your roughing mill and your finishing mill were kept going for 24 hours and the soaking pits kept hot for 24 hours, you won't be able to carry on; you will find that your costs will go up. Take the old bar mill of the Tata Iron and Steel Company. The costs there were at least Rs. 30 per ton higher because it did not balance properly, and only worked one shift.

*Mr. Venkatanaranappa.*—I quite see that.

*President.*—And therefore a smaller quantity of steel will have to bear the overhead charges, and depreciation on the whole mill. I do not know what your estimates are but judging by past experience it does seem to me that Rs. 15 lakhs is rather an under-estimate. I should be very much surprised if you could complete even with Rs. 15 lakhs.

*Mr. Venkatanaranappa.*—I think we will.

*President.*—But even if you take Rs. 15 lakhs and divide it by an output of 10,000 tons.

*Mr. Venkatanaranappa.*—We have got to go in for 25,000 tons when we get power from Jog.

*President.*—Then you don't have any pig iron at all.

*Mr. Venkatanaranappa.*—If it pays us to make steel we will go in only for steel. The costs that we have given you this morning are based on a 25,000 tons production.

*President.*—If you compare the cost of the Tata Iron and Steel Company with their big rolling mills and take Rs. 90 as the works cost, you start with pig iron at about Rs. 85, that gives you a spread of Rs. 55.

*Mr. Venkatanaranappa.*—Yes.

*President.*—I take it this will be a sort of bar mill? You take their pig iron at Rs. 22. When we reported the works cost of their bar mill was Rs. 100.

*Mr. Venkatanaranappa.*—That is the old mill.

*President.*—That is the new mill. Now it has come down. We have taken Rs. 88 in our estimate (please see Table XIII in our report). If you deduct Rs. 22 from Rs. 88, it comes to Rs. 66. They are producing on a very much bigger scale than you. The spread between pig iron and the product is Rs. 66.

*Mr. Venkatanaranappa.*—That is their duplex process.

*President.*—It must be cheaper.

*Mr. Venkatanaranappa.*—Ours will be cheaper.

*President.*—Why should it be?

*Mr. Venkatanaranappa.*—Because our iron is purer than theirs.

*President.*—The whole point is if their cost above material is Rs. 66, you expect yours to be Rs. 55.

*Mr. Venkatanaranappa.*—That is taking electricity cheap. You have taken at 3 pies per unit. I think our wages, supervision and overhead charges are less compared to them. I have taken depreciation and interest on the pipe foundry also there.

*President.*—You have allowed Rs. 50 per ton for overhead and depreciation.

*Dr. Matthal.*—If you cut out the pipe foundry, it will be Rs. 2.

*Mr. Venkatanaranappa.*—It will be Rs. 9.

*President.*—The pipe foundry will have to go out.

*Mr. Venkatanaranappa.*—To be very accurate I have taken also depreciation and interest on that. I have taken the entire output as going for steel.

*Dr. Matthai.*—That might bring it down to Rs. 120.

*Mr. Venkatanaranappa.*—Rs. 130.

*President.*—F.o.r. works.

*Mr. Venkatanaranappa.*—Yes. Part of this will be very high grade steel for which we can get a good price and part we can sell in the local market.

*President.*—You must take expert advice on that point.

*Mr. Venkatanaranappa.*—We can take the figures which Mr. Williams has given and make allowance for the increased tonnage.

*Dr. Matthai.*—What figures of Mr. Williams have you taken? Is it Mr. Williams of Hukumchand's?

*Mr. Venkatanaranappa.*—Yes. You can take even his costs.

*President.*—I have taken his costs. He uses scrap.

*Mr. Venkatanaranappa.*—That is why I have taken a higher price.

*President.*—I am talking of the cost of converting pig iron into steel.

*Mr. Venkatanaranappa.*—He is from scrap to steel. So far as the electrical energy is concerned, it is much the same, except in our case it must be less because we use the hot metal from the furnace directly and it is less. You cannot take the costs there and copy them direct, because he melts a very small quantity.

*Dr. Matthai.*—He melts I believe 600 or 700 tons a year.

*Mr. Venkatanaranappa.*—These figures are based on the costs of his operation and the necessary changes made.

*President.*—There is no comparison, because he uses scrap.

*Mr. Venkatanaranappa.*—In the case of a hot charge from the furnace, it would be somewhere about 400 units, but we have taken 600 units to be on the safer side. As a matter of fact if it is blown in the converter, it might be as low as 250 because all the impurities will be eliminated except the phosphorous.

*President.*—For the converter what would you use?

*Mr. Venkatanaranappa.*—No fuel. The metal from the furnace is put into the converter and blown. The blowing charges and the relining charges are the only charges there. Of course there is some loss of metal.

*President.*—How much do you allow for it?

*Mr. Venkatanaranappa.*—I have not taken the converter at all here. To be on the safe side I have taken the electric furnace. I want to show to you that this is about the maximum cost. We ought to work very much better than this.

*President.*—On the rolling mill you have allowed Rs. 15 a ton.

*Mr. Venkatanaranappa.*—Yes.

*President.*—That includes everything.

*Mr. Venkatanaranappa.*—Yes, except depreciation.

*President.*—Wages and everything?

*Mr. Venkatanaranappa.*—Yes.

*President.*—That is allowing for the roughing mill and the other.

*Mr. Venkatanaranappa.*—Yes, that is the estimate furnished.

*President.*—What is the use of acting on an estimate when you have got the actual cost of a fairly large works with a fair amount of efficiency? Is it not better to learn from actual experience than from an estimate? I would strongly advise you to study the results that have been so far obtained in this country.

*Mr. Venkatanaranappa.*—I think this Rs. 15 is based on the assumption that the ingot need not be reheated.

*President.*—Our estimate of the bar mill is Rs. 88. Our estimate of the future is Rs. 77, after 7 years.

*Mr. Venkatanaranappa.*—This is based on the ingot of a smaller size being rolled without reheating.

*President.*—I am just drawing your attention to the risk of proceeding entirely on an estimate when you have got actual experience before you. I do not know what extra price you will get for your bars.

*Mr. Venkatanaranappa.*—Unless it is for tool steel, we are willing to sell it at Rs. 6-8-0 to Rs. 7.

*President.*—Our scheme contemplates that after 7 years there will be no protection.

*Dr. Matthai.*—Including your depreciation you might be able to market it at Rs. 150.

*Mr. Venkatanaranappa.*—Yes, we ought to.

*President.*—We have contemplated a price of Rs. 110 for bars f.o.r. works.

*Mr. Venkatanaranappa.*—Their freight would work up to Rs. 30 to our market. That will be Rs. 140.

*President.*—The question is, if this protective duty is removed, will you be able to compete? The British price is taken to be Rs. 108 a ton.

*Mr. Venkatanaranappa.*—Delivered where?

*President.*—Delivered at the port.

*Mr. Venkatanaranappa.*—That is c.i.f.

*President.*—Yes.

*Mr. Venkatanaranappa.*—Even then there will be some revenue duty.

*President.*—There may or may not be. If you take 10 per cent., it will be about Rs. 118.

*Mr. Venkatanaranappa.*—Yes, and clearing and other charges will be about Rs. 5.

*President.*—Rs. 118 will be the c.i.f. landed price without duty. That is to say, you must be prepared to compete in the market where the British steel can be imported at Rs. 108.

*Mr. Venkatanaranappa.*—That is Rs. 6 a cwt. The freight to our area would be Rs. 20. Rs. 140 is what we have estimated. As I said, we will not try to make basar grade steel only. Our object will be to manufacture higher grade steel, tool steel, etc. To the extent to which we cannot find a market, we will make ordinary steel. Besides there are ferro alloys. We have chrome ore cheap and we have cheap pig iron. The whole point is we have collected information fairly from all quarters and we have got quotations, but the final decision will have to be taken and some risk, if necessary, has got to be faced. Nobody is going to guarantee that with their machinery we are going to produce at such and such a rate. We have to depend upon the best advice that we can get and the advice of the Tariff Board will be of very great help. This is the only logical development we can think of and I don't believe the world prices are going to remain at this level always.

*President.*—Why do you think so? The chances are that the world prices may go down.

*Mr. Venkatanaranappa.*—I don't believe it is possible, because even as it is the steel prices are very much lower than the general level of prices.

*President.*—There is one other factor to be remembered. You must not run away with the impression that the Tata Iron and Steel Company's steel is the cheapest likely to be produced in India.

*Mr. Venkatanaranappa.*—Possibly in course of time, their steel will be the cheapest in the world.

*President.*—Therefore what you have got to remember is this. If a new steel works is started in this country and if steel is manufactured on a sufficiently large scale, at what price would it be put on the market?

*Mr. Venkatanaranappa.*—Even supposing another works is started, it would have to be somewhere near Bengal because nowhere else is coal cheap. It is not likely that anybody else will start an iron and steel factory in our territory.

*President.*—Supposing on the Bengal side they produce steel at Rs. 75 or Rs. 80 a ton, you cannot get anything more than that price *plus* freight.

*Mr. Venkatanaranappa.*—If we are going to make it at Rs. 80 or 90 or even Rs. 100, I think there is a sufficient margin because we will concentrate as far as possible on the higher grades of steel, ferro alloys, etc.

*President.*—How have you calculated these overhead charges?

*Mr. Venkatanaranappa.*—I have calculated them as follows:—

	Depreciation.	Interest.
	Per cent.	Per cent.
Main plant . . . . .	3	5
Steel plant, etc. . . . .	6½	8

*President.*—You have taken it in the present value without writing down.

*Mr. Venkatanaranappa.*—No, after writing down.

*President.*—At how much have you taken the cost of the new plant?

*Mr. Venkatanaranappa.*—Rs. 15 lakhs without the power plant. Messrs. Perin & Marshall give Rs. 15 lakhs with power, boilers and all that. As we are going to get electricity from Jog, I have not taken that.

*President.*—That is for the roughing mill, soaking pits and electric furnaces.

*Mr. Venkatanaranappa.*—25,000 tons of steel a year would be about 80 tons a day. A 2½-ton electric furnace or a 3-ton electric furnace will produce that quantity or we may have two. In any case it won't exceed Rs. 16 lakhs. We have also got quotations for electric furnaces, rolling mills, etc.

*President.*—I don't see anything about the electric part of it. I doubt whether you have made sufficient allowance for the rolling mill.

*Mr. Venkatanaranappa.*—Even if we increase there, we could reduce power and all that. This is a small rolling mill which has been designed for our purpose. I think that this is designed to roll about half a dozen sections and nothing more.

*President.*—Half a dozen sections cost much more to roll, than one or two.

*Mr. Venkatanaranappa.*—This is the estimate we have.

*President.*—I hope that you would study the results so far obtained in this country as regards rolling anyhow. We have also made estimates as regards the future in our report.

*Dr. Matthai.*—What is the available market at present for special steel in India? Have you any idea?

*Mr. Venkatanaranappa.*—The Kolar Goldfields use appreciable quantities.

*Dr. Matthai.*—What roughly is the market that you estimate?

*Mr. Venkatanaranappa.*—It may be 8 to 10,000 tons.

*Dr. Matthai.*—Of special steel?

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—Taking the whole country?

*Mr. Venkatanaranappa.*—Yes. Some of the high grade steel will have to be exported also. It will stand the freight much better than pig iron.

*President.*—So far as the rolling mill costs are concerned, the way I look at it is this.

*Mr. Venkatanaranappa.*—I believe on the present mill it is Rs. 20 over the ingot cost.



*President.*—They take the Duplex and the Open Hearth together. Rs. 85-32 is their latest cost at the bar mill. They have very nearly reached the maximum production on that mill. Our estimate is Rs. 78.

*Mr. Venkatanaranappa.*—Of course a good deal depends on how they distribute their costs, charges and so on. This is the estimate that has been furnished to us.

*President.*—I have nothing to say. I simply try to point out that I am a man who goes more by experience than by estimates.

*Mr. Venkatanaranappa.*—I can tell you one thing. During the last five years practically all the Bhadravati estimates have been fulfilled in actual operation except in regard to selling prices. On the cost side all the estimates that we have prepared have been fulfilled.

*President.*—Because they were based on actual experience.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Our estimates also are based on actual experience. Here they are not based on actual experience. That is the difference.

*Mr. Venkatanaranappa.*—We have to take a certain amount of risk.

*President.*—That is quite a new thing not done anywhere yet in India.

*Mr. Venkatanaranappa.*—I quite see that.

*President.*—Even in Sweden they don't manufacture steel by the process that you are adopting.

*Mr. Venkatanaranappa.*—They are doing it on a small scale. There are a number of electric furnaces at work.

*President.*—There is a lot of difference between Rs. 42 which is Tata's figure and Rs. 15 which is your figure given in the estimate. Mind the mill at Jamshedpur is a large scale mill.

*Mr. Venkatanaranappa.*—I will go into it to night and see whether any revision is necessary.

*President.*—Even if you take the rail mill, which is the simplest?

*Mr. Venkatanaranappa.*—The only difference is that the size of the ingot is very small.

*President.*—In any estimate that you make as regards future prices you must allow for the fact that protection might be removed.

*Mr. Venkatanaranappa.*—That is after seven years.

*President.*—Two years have already gone and it may be another five years before you get going fully.

*Mr. Venkatanaranappa.*—Even then the price for bars will be Rs. 120.

*President.*—That is not our estimate. Nobody can say definitely what the prices are going to be.

*Mr. Venkatanaranappa.*—We have to make some sort of estimate.

*President.*—We have taken in our estimate the landed price without duty at Rs. 108 for British and Rs. 90 for Continental bars. You know that what you call the local market uses Continental steel.

*Mr. Venkatanaranappa.*—They prefer better steel for cart tyres.

*President.*—I am speaking of ordinary bars.

*Mr. Venkatanaranappa.*—As a matter of fact the Kumardubi people had a mill at Pondicherry and their steel was given special preference.

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*Mr. Venkatanaranappa.*—Yesterday we were talking about the quality of Mysore iron. Here is a testimony about it by Col. Kirkhope, Chief Controller of Stores (read).

*President.*—I won't dispute that charcoal pig is better than coke.

*Mr. Venkatanaranappa.*—Yesterday I gave you some figures about labour. This is one of the books published by us giving cost of labour in some

detail. You will find that labour has been reduced 1,500 that I gave you is possibly a mistake; it includes contract labour, labour on construction work and so on. As regards the statements you wanted we have been able to work them out in a particular form and I don't know whether this would suit the purposes of the Board.

*President.*—What you lose on pipes you make up on alcohol, don't you?

*Mr. Venkatanaranappa.*—In pipes we have not lost in that particular month.

*President.*—On your revised estimates the cost come down from Rs. 36 to Rs. 27?

*Mr. Venkatanaranappa.*—That is on account of a little improvement in pipe foundry operations.

*President.*—Do you consider these figures as correct?

*Mr. Venkatanaranappa.*—If there is any mistake it would be within a rupee.

*President.*—That brings down your cost by Rs. 6 in the estimate.

*Mr. Venkatanaranappa.*—Then we will have to take depreciation and overhead on the old plant.

*President.*—We are taking depreciation on the whole plant in our calculation.

*Mr. Venkatanaranappa.*—I have revised my own estimate and made necessary alterations.

*President.*—Have you got any estimate to show how much the steel in the ingot is going to cost?

*Mr. Venkatanaranappa.*—That gives the steel in the ingot if you take away the rolling figures. Rolling I have taken at Rs. 30.

*President.*—Is this all that you have got?

*Mr. Venkatanaranappa.*—I think that is all right.

*President.*—There are so many items here. What I wanted to know is, first of all what is it going to cost you to convert pig iron into ingot steel?

*Mr. Venkatanaranappa.*—Rs. 63 if you omit the rolling there.

*President.*—Have you taken the waste into account?

*Mr. Venkatanaranappa.*—Waste will come at the rolling stage.

*President.*—Do you know what the yield is?

*Mr. Venkatanaranappa.*—Yield is about 80 per cent. of the ingots.

*President.*—I think you will find that it will be less because in the ingot you get 85 per cent., then when you convert it into bar you get 85 per cent., that is 85 per cent. of 85 per cent.

*Mr. Venkatanaranappa.*—The loss in the electric furnace will be very little.

*President.*—The ingot you may have to convert into blooms and as you are rolling very small sections, these will be billets. As a matter of fact your wastage may be more than in bigger sections.

*Mr. Venkatanaranappa.*—We have based our estimate on figures given by Messrs. Perin & Marshall. They have taken 5/6th as the yield of bars from ingots, which is about 80 per cent.

*President.*—If you look at these figures (Tata's statement) you will find that it is rather on the high side. It would not be safe to take more than 72 per cent. because you are making smaller sections. In the bigger sections there is less wastage. Of course you have got to take credit for 20 to 30 per cent. scrap.

*Mr. Venkatanaranappa.*—Of course that won't be very much because that will be cold scrap.

*President.*—You will find that if your ingots cost you Rs. 63 the steel in one ton of bars will cost  $\frac{100}{74} \times 63$ , or Rs. 88. I am taking rather a conservative figure. ]

*Mr. Venkatanaranappa.*—Credit for scrap will be Rs. 8, so that it will be Rs. 80. 80+30 is Rs. 110 on that basis. In the estimates that have been furnished by Messrs. Perin and Marshall and by a London firm.

*President.*—They might have been going by their own practice; we have got the actual costs here.

*Mr. Venkatanaranappa.*—There is also this fact that in an electric furnace the ingot ends that will be cropped up will be better than open hearth ingots.

*President.*—You must remember this also that the electric furnace requires more careful handling than an open hearth.

*Mr. Venkatanaranappa.*—In the electric furnace you can regulate the operations and at the worst what might happen is that the electric charges might be a little higher. They say that it is the easiest thing to control. Another advantage is that the difference in the cost between a small output and a big output is very small. Taking all that into consideration we thought it best to adopt the electric method. Then again, in these estimates I have not taken the converted operations at all into account and possibly by blowing in the converter the consumption of power and other charges might be considerably reduced.

*President.*—As you have not worked these out in detail, it is very difficult for us to follow.

*Mr. Venkatanaranappa.*—I have taken only 400 k.w. because we take the hot metal from the furnace. 600 to 650 for cold charge is considered very good practice at present.

*President.*—I am afraid I cannot make any comparison between your cost and Tata's cost (Page 239, Vol. II of Tata's evidence).

*Mr. Venkatanaranappa.*—The processes are different.

*President.*—You are talking of estimates, here I am talking of actual results.

*Mr. Venkatanaranappa.*—The processes are entirely different.

*President.*—I am not referring to the process of manufacture but the other charges such as flux, refractories, moulds, relining and labour. Speaking generally, it does seem to me that when the manufacture is on a smaller scale the cost is higher.

*Mr. Venkatanaranappa.*—I can get you the costs in Germany and then you can form your own conclusions. I will try to get that from the manufacturers.

*President.*—The thing you have got to get is the cost of a works which is comparable to yours. Germany makes steel on a very large scale.

*Mr. Venkatanaranappa.*—I mean actual electric furnace cost where they use hot metal.

*President.*—That of course may be some guide.

*Mr. Venkatanaranappa.*—We have got it as given by the manufacturers of these electric furnaces. Of course they vary so much: this is based on a review of all these estimates.

*President.*—If you were to make an allowance for the waste alone, your estimate would be very much increased?

*Mr. Venkatanaranappa.*—As I said, waste in the electric furnace will not be so great as in the open hearth.

*President.*—I am just trying to draw your attention to the points which require consideration.

*Mr. Venkatanaranappa.*—The best thing would be to operate the furnace and then give you actual results. As a matter of fact we have ordered

one, and by April possibly we will be able to give actual results at our own works.

*President.*—Then I won't say anything about this, because, as I said, there are not enough materials.!

*Mr. Venkatanaranappa.*—Take a half cwt. furnace for instance. We have made steel at Bhadravati in the electric furnace that you saw at Bhadravati. Here is the result (handed in).

*President.*—What about the carbon?

*Mr. Venkatanaranappa.*—In a crucible furnace it is not possible to reduce it. This steel is bit, knives, scissors and so on.

*President.*—Who makes them here?

*Mr. Venkatanaranappa.*—I will send you a knife! Then we made some ferro manganese also but I have not yet received the analysis,—two successive heats; first one took 4 hours and 15 minutes and the second one only 2 hours. As a matter of fact we are proceeding very cautiously. We have been consulting practically everybody and getting expert opinion.

*Dr. Matthai.*—How long have you been considering this scheme now?

*Mr. Venkatanaranappa.*—For about a year seriously. We have been dreaming of it for two years or more.

*Dr. Matthai.*—You say in the note under your estimate for the manufacture of 25,000 tons of steel "Assuming that half the quantity will be special and half ordinary bazar grades the latter will fetch Rs. 54 and the former Rs. 108 a ton. So the cost of the tool steel will be Rs. 206". How do you estimate this Rs. 206?

*Mr. Venkatanaranappa.*—The total cost here is Rs. 157, say half of it is ordinary bazar grade and half special steel. Then the bazar grade will fetch Rs. 54 at Rs. 108 and the other half will fetch Rs. 103 at Rs. 206 a ton.

*President.*—Isn't that rather a high estimate?

*Mr. Venkatanaranappa.*—Not for tool steel or other special steels.

*President.*—It will be a difficult matter to dispose of 12,500 tons of tool steel in Mysore, will it not?

*Mr. Venkatanaranappa.*—Part of it will have to be exported. There is one point I would like to mention. You said yesterday that you were writing to all railways and to the Chief Controllers of Stores for the quantities and prices and specification of the steel that they use. Will you kindly ask them also to give quantity and price of all special steels that they make use of.

*President.*—We will write about it.

*Dr. Matthai.*—Have you any idea about the freight on steel from Madras or from Marmagoa to Mysore.

*Mr. Venkatanaranappa.*—I think it will be about Rs. 15 to Rs. 20 From Jamshedpur. I think it is nearly Rs. 30. It is Rs. 60 to Madras. That is special freight.

*President.*—That is in wagon loads?

*Mr. Venkatanaranappa.*—From Madras to Bangalore about Rs. 10. I have tried to be very optimistic in my estimate.

*President.*—The whole thing depends on your being able to get the hydro-electric power.

*Mr. Venkatanaranappa.*—There is no difficulty about that. It is only a question of Government providing the money.

*President.*—Is the Government going to provide the money?

*Mr. Venkatanaranappa.*—If a use can be found for 10,000 horse power, then I think they will.

*President.*—This would amount to 10,000 horse power.

*Mr. Venkatanaranappa.*—With ferro alloys it would be 10,000 horse power. As a matter of fact the electrical department of the Government of Mysore are willing to give us power if we take it from Krishnarajassagara. The distance is about 150 miles. About 10,000 H.P. is the limit. If we generate 10,000 horse power at Jog, it will be capable of expansion later on. They will supply power at our works at 3 pies. I think you can have an open mind till next April when I hope to be able to give you more information on that point. These preliminary discussions have served to bring out all the weak points and I will collect all the necessary information and the necessary data and give you a complete estimate next time we meet.

*President.*—Practically 3/5th of your business is in the bye-products. That is what it comes to. Your total expenditure is Rs. 1,70,000.

*Mr. Venkatanaranappa.*—That is for January, 1928.

*President.*—Really speaking pig iron is a bye-product.

*Mr. Venkatanaranappa.*—Yes, taking the pipe foundry.

*Dr. Matthai.*—The pipe foundry is Rs. 5½ lakhs.

*Mr. Venkatanaranappa.*—Rs. 6,15,000.

*Dr. Matthai.*—I am speaking of the revised estimates.

*Mr. Venkatanaranappa.*—Yes, there are two items. Both pig iron and bye-product will be almost equal.

*Dr. Matthai.*—One-third is pig, one-third pipe and one-third is bye-products.

*Mr. Venkatanaranappa.*—Yes.

*President.*—That has got now to carry the whole of the depreciation and the interest.

*Mr. Venkatanaranappa.*—Yes on one crore. Rs. 6½ lakhs depreciation and even taking it at 5 per cent., it comes to Rs. 50.

*President.*—That gives you Rs. 77.

*Mr. Venkatanaranappa.*—Yes if we omit interest.

*Dr. Matthai.*—Take only depreciation, that will be how much?

*Mr. Venkatanaranappa.*—That will be less than Rs. 30.

*President.*—That will be Rs. 57.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Of course when it came to selling, you took the actual selling price.

*Mr. Venkatanaranappa.*—Except in regard to black paint and creosote, we have taken conservative estimates. We are sure to realise Rs. 12,16,225. Creosote we are selling at As. 12, but we have taken it at As. 10.

*President.*—How do you take 21,000 tons?

*Mr. Venkatanaranappa.*—Because the other pig iron is melted for pipe foundry. Just at present acetate of lime is selling at Rs. 170, but I have taken it at Rs. 140.

*President.*—These are the actuals. If you were to add another Rs. 50, that means you have got to realise Rs. 80 on pig iron. If you don't add interest it is about Rs. 60.

*Dr. Matthai.*—You have taken all these credits at conservative rates.

*Mr. Venkatanaranappa.*—Yes, because I was afraid of the criticism here.

*President.*—Have you taken the actuals?

*Mr. Venkatanaranappa.*—The market has improved considerably. In that month we were not distilling as much tar as we propose to do hereafter.

*President.*—For pipes you have actually realised Rs. 7 and you have taken it at Rs. 6.

*Mr. Venkatanaranappa.*—Yea. As I said it is in conformity with the present market conditions. We can't get more than Rs. 6. Rs. 6 as the works is Rs. 120. We might do a little better.

*President.*—On your present average realisation of Rs. 49, you are losing Rs. 8.

*Mr. Venkatanaranappa.*—Yes, including depreciation we are losing Rs. 8.

*President.*—You have taken 3 per cent. as depreciation.

*Mr. Venkatanaranappa.*—Then of course we just make up. This is the latest market report about acetate. (Handed in). The prices are improving and I have taken only Rs. 140.

*President.*—If you got into the combine, would that give you Rs. 57?

*Mr. Venkatanaranappa.*—I don't think it would.

*President.*—Take your Bombay market.

*Mr. Venkatanaranappa.*—In the Bombay market we can sell only at Rs. 55 or Rs. 57.

*President.*—What is the freight?

*Mr. Venkatanaranappa.*—Rs. 12. On our sales at Ahmedabad it will be less, but the sales to Madras will fetch us more.

*President.*—Supposing there is no competition.

*Mr. Venkatanaranappa.*—If there is no competition the freight from Bombay to Ahmedabad is Rs. 7 or Rs. 8. We can sell there at Rs. 75.

*President.*—You can get a price of Rs. 55 at Bhadravati.

*Mr. Venkatanaranappa.*—Yes, on all our sales this year if we have an understanding.

*President.*—As regards other sales you are already getting Rs. 55.

*Mr. Venkatanaranappa.*—Not on our exports, but I think we would cut our exports to the absolute minimum.

*Dr. Matthai.*—If you get an allotment of say 12,000 tons, that means about half the output has to be sold elsewhere.

*Mr. Venkatanaranappa.*—If the railways take 15,000 tons this year, then we can sell another 6,000 or 7,000.

*Dr. Matthai.*—Supposing you get 15,000 tons from the railways, about 5,000 tons you sell as pipes, there is still a balance of 7,000 or 8,000 tons which you can export.

*Mr. Venkatanaranappa.*—The non-railway demand, that is the Southern Mahratta country and Bombay will take another 5,000 tons.

*Dr. Matthai.*—When the cotton depression passes away.

*Mr. Venkatanaranappa.*—Even at present Southern Mahratta country, Bombay, Ahmedabad, Baroda, Hyderabad, take a certain amount from us. (Statement handed in.) That statement will give you a sort of idea of distribution that we have in mind.

*President.*—It is only 2,000 tons here.

*Mr. Venkatanaranappa.*—That is per month.

*President.*—There is no reason why you should not get this if you were in the combine.

*Mr. Venkatanaranappa.*—No.

*President.*—If these people do not quote.....

*Mr. Venkatanaranappa.*—Even then, the G. I. P., M. S. M. and B., B. and O. I. Rys. won't give us very much.

*President.*—Do you mean to say that they will pay a higher price and buy?

*Mr. Venkatanaranappa.*—No, what I mean is they use only small quantities comparatively.

*President.*—You have not made any arrangements for the East Indian Railway.

*Mr. Venkatanaranappa.*—But that includes exports. That is only an ideal we have in view.

*President.*—What would be your freight?

*Mr. Venkatanaranappa.*—Freight would be Rs. 24.

*President.*—That means they must give you Rs. 79.

*Mr. Venkatanaranappa.*—If they take some lower silican grades which are easier to manufacture—they want generally 3, 4 and 5—we would be content even with Rs. 45 on those grades which is better than export. If we get into the combine and this area is reserved for us including the railways, we will be able to dispose of 12,000 tons.

*President.*—Besides your local market.

*Mr. Venkatanaranappa.*—Besides our foundry. We take that as 5,000 tons. There is still 10,000 tons left of which I want the East Indian Railway to take at least 8,000 tons at about Rs. 45, mostly third and fourth grades which are easier to make.

*President.*—How do you say in your own area you will get 12,000 tons?

*Mr. Venkatanaranappa.*—The distribution is roughly as follows:—

	Tons.
Madras and Southern Mahratta Railway . . . . .	1,500
Great Indian Peninsula Railway . . . . .	2,000
Bombay, Baroda and Central India Railway . . . . .	700
Nizam's Guranteed State Railways . . . . .	200
Southern Mahratta Country . . . . .	1,500
Hyderabad mint and other works in Hyderabad . . . . .	250
Whole of Madras . . . . .	500
Bombay . . . . .	1,500
Ahmedabad and miscellaneous . . . . .	1,850
Total	10,000

*President.*—You require 5,000 tons for your own foundry.

*Mr. Venkatanaranappa.*—Yes. That will be 15,000 tons. It leaves still another 12,000 tons. I think we might export 3,000 to 4,000 tons at about Rs. 50. So the other 7,000 or 8,000 the East Indian Railway will have to purchase, unless the G. I. P. or other railways take more.

*President.*—Do they require more?

*Mr. Venkatanaranappa.*—No. I think the East Indian Railway who are one of the biggest consumers can take something from us.

*Dr. Matthai.*—On that you will get very much less than the normal price.

*Mr. Venkatanaranappa.*—Still we will be getting more than the export price.

*Dr. Matthai.*—You may get Rs. 2 or 3 more.

*Mr. Venkatanaranappa.*—Something more than that if you take the price that they paid last year into consideration.

*Dr. Matthai.*—In 1927, the average would be about Rs. 45 to Rs. 47 f.o.r. Bhadravati.

*Mr. Venkatanaranappa.*—You may take the previous years' figures because the price went down last year owing to our competition.

*Dr. Matthai.*—It comes to this that supposing on the sales in your local area you make about Rs. 55 which will cover your whole cost including depreciation, on your exports and on your sales to the East Indian Railway you will have Rs. 10 to make up.

*Mr. Venkatanaranappa.*—That is we lose about a lakh of rupees. Of course if this market develops and the depression is lifted and Bombay

consumes more, then that quantity will automatically be reduced. Bombay or Kirloskarwadi or Satara may take more. Kirloskarwadi and Satara have got a very big programme of developments for making agricultural implements.

*Dr. Matthai.*—What is your exception? Supposing the question of your entering the combine was raised, would those companies be prepared to surrender 8,000 tons of sales to the East Indian Railway in your favour?

*Mr. Venkatanaranappa.*—They ought to. If we go on competing, their price will also suffer. The East Indian Railway and the North Western Railway take between them about 60,000 or 70,000 tons. If they surrender about 8,000 tons in our favour, they will get more in other markets without our competition. As a matter of fact they stand very much to gain by this elimination of competition.

*President.*—Why haven't you come to an understanding?

*Mr. Venkatanaranappa.*—The question has just been opened and we will take it up.

*President.*—The whole point is this. Even if you went into steel, you may not start going fully for another five years.

*Mr. Venkatanaranappa.*—It will take us, I think, about three years.

*President.*—Even if you were to take 5 years, you would have done well considering that you have yet the hydro-electric scheme to put through.

*Mr. Venkatanaranappa.*—The scheme is practically ready.

*President.*—All that takes time.

*Mr. Venkatanaranappa.*—It will take about three years before we can put our steel on the market.

*President.*—In the meanwhile?

*Mr. Venkatanaranappa.*—There is this alternative that we have got. We have not made up our mind yet. We have got to go rather slowly putting up boilers and generating electricity on a small scale.

*President.*—More as a sort of experiment?

*Mr. Venkatanaranappa.*—Yes, and men will have to be trained. We can also start the paper plant. We have got this advantage that we can get bamboo at Rs. 10 a ton delivered at Bhadravati and that will help the plant to some extent because our transport and other charges will come down.

*President.*—That is quite a different proposition. We are not going into the question of paper now. The immediate question is whether you can get into the combine.

*Mr. Venkatanaranappa.*—We will try.

*President.*—Because if the duty is removed, it cannot be of any great advantage to the other big iron manufacturers for their price of pig iron will come down.

*Mr. Venkatanaranappa.*—I don't think that it will effect them at all.

*President.*—Why should it not?

*Mr. Venkatanaranappa.*—The pig iron manufacturers will be affected.

*President.*—Your local market may not be affected.

*Mr. Venkatanaranappa.*—To some extent we will also be affected because everybody will clamour for a reduction in price.

*President.*—They might think it worth while going into the question.

*Mr. Venkatanaranappa.*—I think we will also go into the question. As a matter of fact it was suggested to us only about three or four days ago.

*President.*—Don't ever make the mistake of calculating your depreciation at 3 per cent.

*Mr. Venkatanaranappa.*—As I told you before, it was merely for depreciation without making any allowance for obsolescence. The idea was that if a surplus was earned, we would reserve Rs. 2 lakhs for improvement and



obsolescence, i.e. (3 plus 2) 5 lakhs. It is more or less the same thing.

*President.*—I would also like to tell you that the writing of the report depends on what decision we come to. For instance if we feel that no case is made out at present for the removal of the duty, no detailed report may be necessary. In that case all this is mere talk. On the other hand if we come to the conclusion that the duty ought to be removed it may become necessary to go into all these points.

*Mr. Venkatanaranappa.*—In any case we would like you to go into this because your opinion would be valuable.

*President.*—We don't give our opinions on points which do not arise. If no recommendation is to be made, we simply say that there is no recommendation to be made without saying anything more.

*Mr. Venkatanaranappa.*—Even for recommending that the existing state of affairs may continue, you will have to give some reasons.

*President.*—Not necessary in a case like this. It is a summary enquiry for that purpose. We can deal with it generally without going into details. If a change is proposed, we may have to go into the reasons.

*Mr. Venkatanaranappa.*—With or without a change in this duty, if we come to an understanding with the combine and with the railways, we would be very much better off.

*President.*—Then the change does not affect you.

*Mr. Venkatanaranappa.*—No, it won't, provided the agreement is come to with the railways or with the combine.

*President.*—The railways do not come in at all if you are taken into the combine. You can always arrange with the other members of the combine to let you have a little more if you are in the combine.

*Mr. Venkatanaranappa.*—Supposing they turn round that they are not satisfied with the quality and want to buy coke iron.

*President.*—You cannot expect the railways to buy your stuff if it is not according to quality.

*Mr. Venkatanaranappa.*—It is not that. I think that if we have an understanding also on that point, it would clear up matters. We can go ahead for the next five or six years without any trouble.

*President.*—Whenever there is a combine among manufacturers each works is given so much of the market as it is entitled to or as it is suitable for it. The railways do not come in at all.

*Mr. Venkatanaranappa.*—Supposing they refuse to let us into the combine, then the railways come in.

THE MYSORE IRON WORKS, BHADRAVATI.

B.—ORAL.

Evidence of Messrs. M. VENKATANARANAPPA and V. GANESHA IYER recorded at Cotacamund on Wednesday, the 10th July 1929.

*President.*—Mr. Venkatanaranappa, we are very much obliged to you for having again come here this distance at so much inconvenience to yourself to give evidence. The point that we really want to enquire into at this stage is very simple. We have been through the evidence that has been already recorded and it does appear *prima facie* there may be no case for the retention of this duty on pig iron. You would agree that as a matter of principle when the duty serves no practical purpose, it ought to be removed. If we are satisfied that the Mysore Iron Works which is a very important work in the country, does need protection, so far as this revenue duty is able to give it, we should be averse from making any recommendations that the revenue duty should be removed. Therefore it is necessary for us to see to what extent this duty is needed by you and if it was removed, how it would affect you. It is a very simple issue. There would be no difficulty in your establishing the point. At present as you are situated, the removal of the duty would be not in your interests. You must substantiate that by facts. Theoretically the removal of the duty would reduce the price of pig iron by Rs. 7.

*Mr. Venkatanaranappa.*—As a matter of fact the Mysore Iron Works has to compete with foreign iron and also the iron produced in Bengal. If the Bengal Companies reduce their price below the import price of foreign pig iron, then the duty does not affect us at all, but if they maintain the higher level of price, the removal of the duty will affect us. That is the point. For instance until about two years ago the understanding between the three companies was that they should maintain a level of price at the ports which was just equal to the foreign price plus the duty.

*President.*—Less Rs. 5.

*Mr. Venkatanaranappa.*—But the duty was more than Rs. 5.

*President.*—In order to induce the customer somehow to use Indian pig iron, they have got to make a reduction of about Rs. 5.

*Dr. Matthai.*—There is no foreign pig iron coming to Madras.

*Mr. Venkatanaranappa.*—A very small quantity—about 10 or 20 tons but the South Indian Railway import some quantity.

*President.*—I think it is quite negligible.

*Mr. Venkatanaranappa.*—Yes.

*President.*—The prices are fixed in this way. They take the c.i.f. price, add the duty and they deduct Rs. 5 on an average. What would happen is that if you remove the duty, it would be the c.i.f. price less Rs. 5.

*Mr. Venkatanaranappa.*—Yes.

*President.*—So that that duty is a constant factor.

*Mr. Venkatanaranappa.*—At present it is not so scientifically done as it was done before. Two years ago there was a fixed price at the ports. That is entirely changed now, so that for the time being the removal of the duty may not affect us at all.

*Dr. Matthai.*—Do you mean that prices are fixed according to conditions of local competition and has nothing whatever to do with the duty?

*Mr. Venkatanaranappa.*—Yes.

*Mr. Mathias.*—Supposing the duty was taken off, it would mean practically that the combine would have to reduce their price.

*Mr. Venkatanaranappa.*—Their price is so low that even without the duty the foreign iron cannot come in.

*Mr. Mathias.*—They had to keep their price so low in order to induce the consumer in India to use Indian pig iron.

*Mr. Venkatanaranappa.*—They would not have to reduce it.

*President.*—When the duty is removed, the purchaser knows that he can import Rs. 7 cheaper. Why should he not ask these people to reduce their price by Rs. 7? Now they charge c.i.f. plus the duty minus a certain sum. When that duty is removed, they will have to deduct a certain sum again from the c.i.f. price.

*Mr. Venkatanaranappa.*—There will be some agitation to reduce the price by that amount.

*Mr. Mathias.*—That is the point I was trying to make. To that extent you must be affected by any reduction in duty eventually even though not at once.

*Mr. Venkatanaranappa.*—As a matter of fact the amount of pig iron that they are selling outside for these small foundries is so small compared with their output and their sales that a reduction of Rs. 5 will not affect them.

*President.*—It may not break them, but it will reduce their revenue.

*Mr. Venkatanaranappa.*—It will be almost negligible.

*President.*—They sell about 140,000 tons.

*Mr. Venkatanaranappa.*—The railways purchase a lot.

*President.*—Why should not the railways insist on the reduction of price when they know that the duty has been removed?

*Mr. Venkatanaranappa.*—That is by tender. It will all be more or less due to internal competition. So even if the price falls, so far as they are concerned, they will be affected to the extent of 20,000 or 30,000 tons, but we will be affected practically on all our sales.

*President.*—That is the point I want to consider.

*Mr. Venkatanaranappa.*—My point is this: even if the duty is removed, if the other companies maintained a high price, we won't be affected by the removal of the duty.

*Dr. Matthai.*—We have got to assume that the price will fall.

*Mr. Mathias.*—We were told that if the duty was taken off, although the price quoted for the big consumers, say railways, would not be appreciably reduced, the bazaar price would be reduced by about Rs. 5 a ton.

*Mr. Venkatanaranappa.*—Yes.

*Mr. Mathias.*—Then of course it would affect you appreciably.

*Mr. Venkatanaranappa.*—Yes.

*Mr. Mathias.*—And Rs. 5 a ton on your pig iron will mean a considerable amount for you.

*Mr. Venkatanaranappa.*—Yes.

*President.*—It is not the business of this Board to advise these manufacturers, but it does seem to me that they may be labouring under some mistake if they think that the railways who are big consumers are not going to ask for a reduction of price when the duty is removed.

*Mr. Venkatanaranappa.*—The reduction of price in their case will not come about, because they may not be able to import at that price even now.

*President.*—At what price?

*Mr. Venkatanaranappa.*—For the Madras and Southern Mahratta Railway, we sell our pig iron at Rs. 48 f.o.r. Bhadravati or Rs. 51, Perambur. Even if the duty is removed, they will not be able to import at that price.

*President.*—The prices are ordinarily governed by the import price!

*Mr. Venkatanaranappa.*—I say just at present it is not.

*President.*—So far as you are concerned...

*Mr. Venkatanaranappa.*—Yes, so far as we are concerned. It is governed by the price at which the combine is willing to sell in different parts of the country. They are maintaining a steady price at Calcutta and selling at lower rates practically at Bombay, Madras and other places. Therefore, it is the combine that regulates our price, more than the foreign pig iron.

*Dr. Matthai.*—This year your tender is Rs. 51 for the Madras and Southern Mahratta Railway.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—What was the tender price of the Indian Iron and Steel Company?

*Mr. Venkatanaranappa.*—Last year, I believe it was Rs. 55 delivered at Hubli or Madras. Ours is Rs. 51 Perambur and Rs. 50 Hubli.

*Mr. Mathias.*—What was the amount of order?

*Mr. Venkatanaranappa.*—1,200 tons.

*President.*—You got it.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Last year you didn't have any order.

*Mr. Venkatanaranappa.*—No. For instance for the G. I. P. Railway our quotation was Rs. 61. We got the order.

*President.*—Delivered Parel.

*Mr. Venkatanaranappa.*—Yes. We get Rs. 48 net. Rs. 16 is the freight from Bengal. Two years ago when the combine maintained port prices, they were selling at about Rs. 66 to Rs. 67, so that just at the moment, so far as we are concerned, it is their prices that regulate.

*Dr. Matthai.*—It might come to the same thing. Their price may be determined with reference to import price plus the duty.

*Mr. Venkatanaranappa.*—My point is just now it is not; it was so two years ago.

*Dr. Matthai.*—The point that you are really trying to make is that in your area the combine are quoting prices which have no particular relation to import prices, but are really for the purpose of knocking you out.

*Mr. Venkatanaranappa.*—Yes.

*Mr. Mathias.*—That is only for big orders.

*Mr. Venkatanaranappa.*—About 1,000 tons is not a big order.

*Mr. Mathias.*—I think their prices for the bazaar business would be higher.

*Mr. Venkatanaranappa.*—We are getting practically all those orders. We are selling at Rs. 64 to Rs. 65 in Bombay which nets us Rs. 52.

*Mr. Mathias.*—In Madras?

*Mr. Venkatanaranappa.*—About Rs. 63, Rs. 64. We are trying to get an average rate of Rs. 50.

*Dr. Matthai.*—Average of Rs. 50 at the works.

*Mr. Venkatanaranappa.*—Yes. In some case on all our sales in the Madras and Southern Mahratta country we get a little more because our average freight is between Rs. 6 to Rs. 7.

*President.*—Since we started this enquiry last year, there has been a difference of about Rs. 6 in the quotation of the combine.

*Mr. Venkatanaranappa.*—That is because we began to quote at Calcutta and other distant places and they had to reduce their price.

*President.*—Whatever the cause, this year there has been a difference of Rs. 6.

*Mr. Venkatanaranappa.*—If we withdrew from the Calcutta market, they would raise the price by Rs. 6. It is the internal competition and not the foreign price that regulates the price. We know the East Indian Railway is the biggest purchaser. This year we practically quoted the same rate as they have for the East Indian Railway.

*Dr. Matthai.*—What is your output this year?

*Mr. Venkatanaranappa.*—We are getting an average of 65 tons.

*Dr. Matthai.*—That would come to 25,000 tons a year.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—That is to say you have recovered the Madras and Southern Mahratta Railway market.

*Mr. Venkatanaranappa.*—Yes, this year. I do not know what is going to happen next year. This year we have got both the Great Indian Peninsula Railway and the Madras and Southern Mahratta Railway; and a small order from the South Indian Railway, Bombay, Baroda and Central India Railway and the East Indian Railway.

*Dr. Matthai.*—You got these orders by quoting lower prices.

*Mr. Venkatanaranappa.*—Yes.

*President.*—At what average do these prices for which these orders have been booked work out at your works?

*Mr. Venkatanaranappa.*—Rs. 48 to Rs. 50.

*President.*—I want to get the figures together. First of all we want to ascertain your fair selling price.

*Mr. Venkatanaranappa.*—Fair selling price we calculated last time.

*President.*—I know, but I want to be quite clear. Has there been any reduction in your costs since we last met?

*Mr. Venkatanaranappa.*—We have not even worked up to the estimate we gave you, viz., Rs. 27.5 without depreciation.

*Dr. Matthai.*—Does that correspond to Rs. 43 including depreciation?

*Mr. Venkatanaranappa.*—Including depreciation it will be more if you take depreciation at 6½ per cent.

*President.*—You have not reached that figure yet?

*Mr. Venkatanaranappa.*—No.

*President.*—Your actual cost is Rs. 33.

*Mr. Venkatanaranappa.*—You can take Rs. 33 as our present cost, though it has varied from month to month.

*Mr. Mathias.*—That is the works cost.

*Mr. Venkatanaranappa.*—Yes, taking credit for all the by-products.

*President.*—The by-products are such an uncertain factor. Really speaking, your pig iron becomes a by-product because out of your total cost of Rs. 18 lakhs, Rs. 12 lakhs are for by-products.

*Mr. Venkatanaranappa.*—That includes pipes. Chemical products are Rs. 6 lakhs, pipes Rs. 6 lakhs and the net cost left over is roughly Rs. 6 lakhs.

*President.*—So that, looking at your whole costs in the way in which we make up accounts, you depend very largely upon the market for by-products.

*Mr. Venkatanaranappa.*—Yes.

*President.*—When there are so many by-products it is very difficult for anybody really to make any estimate, is not that so?

*Mr. Venkatanaranappa.*—I quite see that. Then the prices of by-products have fluctuated so much in the last five years.

*President.*—They must fluctuate.

*Mr. Venkatanaranappa.*—I hope they will fluctuate the other way a bit because they have gone down so much.

*President.*—That is our difficulty.

*Mr. Venkatanaranappa.*—I think that we can take that the present prices will more or less continue for the next five years because I do not think that anything sensational will happen, though in America they are making frantic efforts to find out more profitable uses for tar and tar distillates.

*Mr. Mathias.*—You get credit for crude alcohol at the rate of 8 annas per gallon.

*Mr. Venkatanaranappa.*—Yes, for crude alcohol.

*President.*—What does "C. P. Methanol" mean?

*Mr. Venkatanaranappa.*—It is commercially pure methanol.

*Mr. Mathias.*—Is that about a rupee a gallon?

*Mr. Venkatanaranappa.*—Yes.

*Mr. Mathias.*—That is at the works?

*Mr. Venkatanaranappa.*—Yes, net. As regards methanol we depend entirely upon the foreign market.

*Mr. Mathias.*—Is there no market in India?

*Mr. Venkatanaranappa.*—No. At one time, before the war, they used methanol as a denaturant to make methylated spirits but during the war methanol became unobtainable and the Government of India changed the formula to pyridine and caoutchine. We requested the Government of India to restore the old formula but they are not prepared to do so because some excise officer has told them that tribes drink the alcohol thus denatured and survive.

*Mr. Mathias.*—Can you use methyl alcohol for the same purposes as rectified spirit.

*Mr. Venkatanaranappa.*—For denaturing only you can use it.

*Mr. Mathias.*—Can you use it for burning for instance?

*Mr. Venkatanaranappa.*—Yes.

*Mr. Mathias.*—In the lac industry it can be used.

*Mr. Venkatanaranappa.*—Yes, but there is no lac industry in India. Lac is all exported.

*Mr. Mathias.*—There are two factories in Calcutta.

*Mr. Venkatanaranappa.*—They take very small quantities only. The price of ethyl alcohol is so low that we cannot compete.

*Mr. Mathias.*—It is Rs. 1-4-0 in Calcutta.

*Mr. Venkatanaranappa.*—They are getting it even cheaper from Java.

*Mr. Mathias.*—We were given a price of 12 annas (wholesale).

*Mr. Venkatanaranappa.*—We could not land it in Calcutta at less than Rs. 1-6-0. If it is anything less than Rs. 1-6-0, it pays us to export rather than sell it in Calcutta.

*Dr. Matthai.*—You export it as crude mainly.

*Mr. Venkatanaranappa.*—As refined. One of our difficulties in regard to methanol is securing freight because it is classed as dangerous goods taken on deck and the Captain has the option to refuse it.

*Dr. Matthai.*—Refining makes a big difference in freight.

*Mr. Venkatanaranappa.*—Yes, and also in the quantity to be shipped. Sometimes in the same line, one Captain refuses to take it whereas another takes it.

*Dr. Matthai.*—That is to say, the price which you get for your refined spirit works out on crude to about eight annas per gallon.

*Mr. Venkatanaranappa.*—Yes. For the refined it is one rupee a gallon and for the crude it is about eight annas. The latter is a sort of assumed valuation.

*Mr. Mathias.*—Are there no lac factories in Madras?

*Mr. Venkatanaranappa.*—Not that I knew of. There is one in Bangalore started by the Mysore Government themselves. They are taking a very small quantity, 100 gallons a month or so. Messrs. Kirloskar Bros. have put up a formaldehyde plant. Though they are now taking 1,000 gallons monthly, they will take a little more hereafter.

*Mr. Mathias.*—Are you acquainted with the lac industry?

*Mr. Venkatanaranappa.*—No, I do not know very much.

*Mr. Mathias.*—Can you tell us whether India provides the greater portion of the lac supplies of the world?

*Mr. Venkatanaranappa.*—I have no idea, but I can get the information for you from the Forest Department which has got all the information.

*Mr. Mathias.*—My impression is that most of the lac supplied to America is from India. I was wondering whether the European supplies also came from India.

*Mr. Venkatanaranappa.*—I have no idea but I can get that information for you.

*Mr. Mathias.*—I think that the greater part of the European supplies also come from India, although I am not sure.

*President.*—Your actual cost was Rs. 36.

*Dr. Matthai.*—Rs. 33 is their estimate for 1929-30.

*Mr. Venkatanaranappa.*—The estimated cost is Rs. 27. Rs. 36 was for the best month which you wanted.

*President.*—What was the cost worked out in this way?

*Mr. Venkatanaranappa.*—Rs. 33.

*President.*—That is to say it has come down from Rs. 36 to Rs. 33. That is how we must look at it.

*Mr. Venkatanaranappa.*—Rs. 33 is the sort of average I am giving you. Rs. 36 was for the best month then.

*President.*—Still you have Rs. 6 to make up.

*Mr. Venkatanaranappa.*—That is because of the by-products. We are not finding a ready sale for some of our by-products. It will take some time before we can work up to those figures. As a matter of fact we are taking this for monthly comparison. It is only under tar products and under pipes that we are failing at present. Our output of pipes is not up to the estimated figure yet.

*Dr. Matthai.*—May I take it that this cost of Rs. 33 is your average net cost? With depreciation it is Rs. 43 apparently, calculating depreciation at your rate?

*Mr. Venkatanaranappa.*—If you calculate depreciation at 6½ per cent. it will be nearly Rs. 30.

*Dr. Matthai.*—At 2½ per cent. it would be about Rs. 10.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Your works cost with depreciation will be Rs. 63.

*Mr. Venkatanaranappa.*—We can work down to Rs. 60 easily. So, the fair selling price for our iron will be Rs. 60 without any profit.

*Mr. Mathias.*—You are not getting that.

*Mr. Venkatanaranappa.*—No, we are not. Rs. 60 was the pre-war price.

*Dr. Matthai.*—I thought it was Rs. 94.

*Mr. Venkatanaranappa.*—I am talking of the pre-war price. We sold some quantity at Rs. 100. Just after the armistice Tata's sold some at Rs. 130. Those days are gone now.

*President.*—Looking at the revised estimate, I think you have spent Rs. 2,07 lakhs, on your plant and equipment.

*Mr. Venkatanaranappa.*—Yes, including the enlarged pipe foundry it will be roughly that. The writing down of the capital has been sanctioned by Government.

*President.*—I know. What it comes to is this: that one half is the pig iron plant and about one half would be tramways, etc.

*Mr. Venkatanaranappa.*—Roughly.

*President.*—What I fear is that we may be putting too much on pig iron and too little on by-products.

*Mr. Venkatanaranappa.*—Whatever it is, we are taking by-products.

*President.*—It may not be altogether a fair way of looking at pig iron. That is what I am trying to point out.

*Mr. Venkatanaranappa.*—If you exclude the by-products then the fair way would be to take the charcoal price at what it would cost us to preface by ordinary burning at Bhadravati.

*President.*—What would be the fair amount of depreciation that you ought to throw on the pig iron plant?

*Mr. Venkatanaranappa.*—We are giving credit for all the by-products.

*President.*—If you were to throw the whole of your depreciation on pig iron, it may be that you are losing on your by-products. It may be that you are losing on pipes for instance. This is how the position stands. In 1923 you had spent on the central factory Rs. 103 lakhs. After that you have put in these two additional batteries or retorts, on which you have spent Rs. 28 lakhs, and enlarged the blast furnaces at a cost of Rs. 70,000.

*Mr. Venkatanaranappa.*—That is the additional stove.

*President.*—You have spent Rs. 6 lakhs on pipe foundries.

*Mr. Venkatanaranappa.*—Yes.

*President.*—The whole point that I am trying to consider is for all practical purposes you throw the whole depreciation on pig iron which also gets credit for all by-products.

*Mr. Venkatanaranappa.*—Yes.

*President.*—That is perfectly true. It may be as I said a little while ago that you are losing on by-products.

*Mr. Venkatanaranappa.*—In that case you will have to deduct all the capital cost of the by-products plant. What we have got to show is what it will cost us if we put up only the furnace and bring the ore and charcoal to the factory. That will be on an entirely different basis.

*President.*—Then the charcoal will be too expensive.

*Mr. Venkatanaranappa.*—Yes. You cannot divorce the by-products from pig iron.

*President.*—That is the trouble. The value of pig iron is about one third of the total production.

*Mr. Venkatanaranappa.*—Do you mean taking the value?

*President.*—Yes. If you take the pig iron plant it roughly comes to Rs. 107 lakhs, according to your books.

*Mr. Venkatanaranappa.*—That includes the by-product plant also. If you take only the furnace and stoves and the track for bringing charcoal, you will have to estimate it *de novo*.

*President.*—You have got to divide the depreciation equally because the earning capacity is the same.



*Mr. Venkatanaranappa.*—On pig iron it is more evidently. We get Rs. 6 lakhs from by-products—six lakhs from pipes—and from pig iron even at Rs. 45 we get about 9 lakhs. So, it will be in the proportion of 3:2:2.

*President.*—It is unfair to say that pig iron must earn Rs. 63 a ton, does it not strike you so?

*Mr. Venkatanaranappa.*—It is not unfair.

*President.*—That is the way we make our accounts to see how the position stands.

*Mr. Venkatanaranappa.*—There are lots of difficulties. It will have to be some sort of assumption.

*President.*—The simplest way is to throw the whole thing on pig iron.

*Mr. Mathias.*—You will also be throwing the whole of your losses on pig iron.

*Mr. Venkatanaranappa.*—Yes.

*Mr. Mathias.*—The assumption is that both by-products and pipes are paying their way, and that the loss is incurred on the manufacture of pig iron.

*Mr. Venkatanaranappa.*—The by-product plant is there. So far as pipes are concerned, we can separate them easily. We can calculate the costs with the pipe foundry shut down. That is easy. There is no difficulty in separating the cost of the foundry.

*President.*—You have given the cost of pipe foundry separately.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—The reduction of railway freight on coal will make some difference, would it not?

*Mr. Venkatanaranappa.*—It would but it has not come yet.

*Dr. Matthai.*—Have you tried to work out how much it would cost? Last year you paid Rs. 25 for freight.

*Mr. Venkatanaranappa.*—Yes.

*President.*—I don't understand your freight at all. The freight from Calcutta to Bombay comes to less than Rs. 25 and that is a longer distance.

*Mr. Venkatanaranappa.*—The Madras and Southern Mahrattā Railway and the South Indian Railway have not agreed to the reduction so that we are getting the benefit on the Bengal Nagpur Railway portion alone. Even last year we paid Rs. 25 on coal and coke.

*Mr. Mathias.*—You will get some rebate?

*Mr. Venkatanaranappa.*—We have been told that we will get some but we will have to work it out. That won't be much because our cost delivered at Bhadravati is Rs. 35 or 36 and Rs. 2 to 3 out of that won't help us much.

*Mr. Mathias.*—Which is your route to the coalfields?

*Mr. Venkatanaranappa.*—Waltair, Berwada, Guntakal, Bangalore.

*President.*—In that case your distance from the coalfields won't be very much more than that from Bombay to Calcutta.

*Mr. Venkatanaranappa.*—That is so.

*President.*—I can find no way of really allocating this.

*Mr. Venkatanaranappa.*—I think the best thing would be to take this as Rs. 30 to Rs. 32, plus.

*President.*—8½ per cent. depreciation may be a little too much in your case because you have got the tramways and besides in the steel plant there is room for more obsolescence than in the blast furnaces.

*Mr. Venkatanaranappa.*—Yes.

*President.*—I think the Indian Iron and Steel Company consider that 4 per cent. would be a reasonable figure. I think if we take 4 per cent. on ½ and 2½ per cent. on ½ that would be about right.

*Mr. Venkatanaranappa.*—Yes, that will come to about 3½ per cent.

*Dr. Matthai.*—In that case your costs would come down to Rs. 48.

*Mr. Venkatanaranappa.*—It comes to about Rs. 50, the capital being Rs. 1,17,00,000.

*President.*—Take 5 per cent. for interest on writing down value. 3½ per cent. on Rs. 110 lakhs=3.85 on 21,000 tons. Then working capital Rs. 20 lakhs, at 5 per cent. comes to Rs. 1 lakh, that is a total of Rs. 4.85; dividing that by 21,000 tons it comes to Rs. 23. Rs. 23 with your ideal of Rs. 27 will be Rs. 50. With 5 per cent. on Rs. 110 lakhs, or Rs. 26, it comes to Rs. 76. That is a hopeless position, is it not? Supposing the combine takes a more reasonable attitude, from your point of view, then the highest price that you can expect at the ports, with the duty, is Rs. 73. Then they give a reduction of Rs. 5; that makes it Rs. 68 at the ports.

*Mr. Venkatanaranappa.*—And Rs. 12 is the biggest freight.

*President.*—That is to say Rs. 56 as regards Bombay and as regards Madras.

*Mr. Venkatanaranappa.*—Rs. 62: Rs. 6 is the freight.

*President.*—In your own market you have got an advantage of Rs. 6. That will give you Rs. 74.

*Mr. Venkatanaranappa.*—Yes.

*President.*—What is the market represented by Rs. 74?

*Mr. Venkatanaranappa.*—Rs. 74 you can take as 4,000 tons.

„ 62	„	2,500	„
„ 56	„	4,500	„

TOTAL . . . 11,000 „

*President.*—Does it include pipes?

*Mr. Venkatanaranappa.*—No. I am talking only of pig iron.

*President.*—So that the average is Rs. 61 for 11,000 tons.

*Mr. Venkatanaranappa.*—Yes, and the balance 10,000 tons have to be exported.

*President.*—How much do you get for it?

*Mr. Venkatanaranappa.*—At present prices about Rs. 45.

*President.*—11,000 tons at 61 and 10,000 tons at 45, that gives you an average of about Rs. 53.

*Mr. Venkatanaranappa.*—Yes.

*President.*—That is what you ought to get. What are you actually getting?

*Mr. Venkatanaranappa.*—Rs. 60 for 4,000 tons.

„ 55	„	2,500	„
„ 50	„	5,500	„

or on an average Rs. 55 roughly.

*President.*—What about the export?

*Mr. Venkatanaranappa.*—We get about Rs. 42 to Rs. 43 now.

*President.*—Shall we take it at Rs. 42?

*Mr. Venkatanaranappa.*—Yes.

*President.*—That gives you an average of Rs. 43?

*Mr. Venkatanaranappa.*—Yes.

*President.*—The position now is this that you are not recovering even your depreciation in full even with this duty.

*Mr. Venkatanaranappa.*—That is so.

*President.*—Theoretically as regards your internal sales you would be affected by about Rs. 7 on the 11,000 tons if the duty was reduced?

*Mr. Venkatanaranappa.*—Rs. 48 would come down to Rs. 44.

*President.*—So that the position is quite clear from your point of view that the duty cannot be removed?

*Mr. Venkatanaranappa.*—Yes, unless, as I said, the Government of India undertake to purchase for the railways and for their own workshops 15,000 tons a year at about Rs. 60 a ton for a period of at least five years.

*President.*—The whole point is this. So long as the Indian Iron and Steel Company do not go in for the manufacture of steel the position must remain what it is: when they do begin to manufacture steel they will have very much less pig iron to sell and therefore the price may approximate.

*Mr. Venkatanaranappa.*—In the first instance that will affect only the exports and not the sales within India, and even if they are going into the manufacture of steel its effect on the sales in India is very remote.

*President.*—There is no way that I can see how you can sell these 10,000 tons in India. They are not getting even Rs. 42; their average price is Rs. 36 or Rs. 37, including exports.

*Mr. Venkatanaranappa.*—But we can never forget that ours is a superior grade pig iron!

*President.*—Unless you get a higher price for your better quality pig iron there is no other way in which you can get more than Rs. 42. Even if they were willing to buy and sell it for you they can only give you the average price that they realise, isn't that so?

*Mr. Venkatanaranappa.*—Yes, but if the Government of India will make up their mind to buy from us, otherwise it is no use. As a matter of fact, I had a long talk with Mr. Peterson after your suggestion. Possibly he wrote to you about it—but they were not willing to give us any more advantage beyond what we already possess.

*President.*—They have got so much pig iron to dispose of.

*Mr. Venkatanaranappa.*—They might have told us that they would not come to an understanding and that they would compete with us.

*President.*—The only thing they can do is to put up the price of pig iron by Rs. 3 or Rs. 4.

*Mr. Venkatanaranappa.*—As a matter of fact, we were very much better off when they had an understanding about the port prices. We always got a better return. I think in those years our net rate was Rs. 51. It has gone down to Rs. 48.

*Dr. Matthai.*—How long ago was that?

*Mr. Venkatanaranappa.*—Two years ago.

*Mr. Mathias.*—Was not there some talk about the combine?

*Mr. Venkatanaranappa.*—It started afterwards.

*Mr. Mathias.*—Possibly as a result of that they reduced the price.

*Mr. Venkatanaranappa.*—No. I think the combine started afterwards. This campaign in the press was due to, I think, an impression that they gave pig iron at a lower rate to one firm manufacturing sleepers and not to others.

*Mr. Mathias.*—What was the reason for the change of policy, do you know?

*Mr. Venkatanaranappa.*—I don't know. There is the other point. Out of this 11,000 tons we really can secure about 4,000 to 5,000 tons railway orders, because they are very large orders; and they depend on tenders.

*Dr. Matthai.*—About half of that would be secured to you if you accepted the proposals of the combine.

*Mr. Venkatanaranappa.*—Nothing would be secure to us excepting the order of the Madras and Southern Mahratta Railway.

*President.*—The Madras and Southern Mahratta Railway takes about 1,500 tons. That is your market.

*Mr. Venkatanaranappa.*—Yes.

*President.*—What is the average you consider reasonable?

*Mr. Venkatanaranappa.*—2,000 tons.

*President.*—Let us take 2,000 tons. Then the Nizam's State Railway is only 100 tons. The Bombay, Baroda and Central India Railway is 1,500.

*Mr. Venkatanaranappa.*—Yes, they have been dividing the order half and half between us and the other companies.

*President.*—Taking the whole of the railways, it is roughly 5,000 tons. That you may expect to get if the railways took the view that this was your legitimate market.

*Mr. Venkatanaranappa.*—Yes.

*President.*—That is as regards the railways on this side. On the other side there are about 18,000 tons. The East Indian Railway has purchased only about 15,000 tons and the North Western Railway 2,000 tons.

*Mr. Venkatanaranappa.*—Yes, and the Assam-Bengal Railway took 280 tons from us.

*President.*—How much are you actually getting now?

*Mr. Venkatanaranappa.*—We have got nothing except 600 tons from the Bombay, Baroda and Central India Railway. We can't depend upon that always. Since we started, the Madras and Southern Mahratta Railway purchased from us for 4 years; for two years we lost their custom and then this year we have got it.

*President.*—I am trying to ascertain your geographical market.

*Mr. Venkatanaranappa.*—This year we have got orders for 5,000 tons.

*President.*—What is your local market?

*Mr. Venkatanaranappa.*—The Southern Mahratta country and Bombay.

*President.*—Let us take Kirloskars.

*Mr. Venkatanaranappa.*—They will take anywhere from 1,500 to 2,000 tons. Satara will take 500 tons. They are likely to expand soon and take more. Messrs. Richardson and Cruddas will take 500 tons. We can practically depend on that.

*President.*—Then there are the Ahmedabad and Bombay markets.

*Mr. Venkatanaranappa.*—Bombay and Ahmedabad are very uncertain markets at present. Under normal conditions Ahmedabad and Bombay ought to consume 3,000 tons. There are a number of small foundries making ginning mill parts and other machinery. But now we are not selling more than 1,000 tons. Miscellaneous—Madras, Mysore and Hyderabad will consume about 1,000 tons.

*President.*—That is about 5,000 tons.

*Mr. Venkatanaranappa.*—We are selling about 10 to 12,000 tons regularly.

*President.*—Then what about your own foundry?

*Mr. Venkatanaranappa.*—21,000 tons excludes that.

*President.*—You have thrown the whole of the depreciation on 21,000 tons instead of on 25,000 tons.

*Mr. Venkatanaranappa.*—Because we have taken the gross revenue from pipes as a sort of credit to pig iron.

*President.*—You have used up 4,000 tons in the manufacture of pipes.

*Mr. Venkatanaranappa.*—Yes and taken the gross realisation from pipes as credit.

*Mr. Mathias.*—21,000 tons bears the whole loss.

*Mr. Venkatanaranappa.*—Yes, it must.

*Mr. Mathias.*—The smaller the surplus of pig iron to be sold the greater on paper will be shown the loss.

*Dr. Matthai.*—If you take the whole of the pipes as a by-product recovery, then obviously the depreciation would have to be calculated on what is left over.

*Mr. Venkatanaranappa.*—Yes. The point is because of the pipe foundry, this has swelled. We can go into it separately. Supposing there was no pipe foundry, would that improve matters? It would not. The realisation from the pipe foundry we have taken as Rs. 6 lakhs. We can get the expenditure on the pipe foundry. It will be seen that the net credit causes the depreciation on the pipe foundry and leaves a little margin so that it is really added to the revenue realised on pig iron.

*President.*—I think that the pipe foundry taken in that way would be for the benefit of pig iron.

*Mr. Venkatanaranappa.*—Yes.

*Mr. Mathias.*—To that extent if you had no pipe foundry, you would suffer a loss.

*Mr. Venkatanaranappa.*—It would not be Rs. 6 lakhs, but it would be very much more. We have a regular market for 10,000 to 12,000 tons.

*President.*—Let us see in your realisations whether there is going to be any difference. Shall we take your estimates as regards by-products.

*Mr. Venkatanaranappa.*—Yes.

*President.*—You have taken acetate 2,040 tons at Rs. 140.

*Mr. Venkatanaranappa.*—The price has now gone up, but the quantity has not reached our expectations.

*President.*—What is the price of acetate?

*Mr. Venkatanaranappa.*—Rs. 180, Rs. 40 more.

*President.*—That will make a substantial difference—nearly a lakh of rupees.

*Mr. Venkatanaranappa.*—This year we hope to improve on it. Now the output has suffered somewhat.

*President.*—What is your average output?

*Mr. Venkatanaranappa.*—About 1,900 tons for the year.

*President.*—Your actual in January was 143 tons.

*Mr. Venkatanaranappa.*—Yes, it would be 1,700 tons for the year.

*President.*—Supposing we took 1,800 tons instead of 2,040 tons, would that be right?

*Mr. Venkatanaranappa.*—You can take 1,900 tons at Rs. 180.

*Dr. Matthai.*—I take it one of the strongest points in your favour is the fact that you make this acetate of lime.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—If the cordite factory in time of war wants acetone, then they will take all the output.

*Mr. Venkatanaranappa.*—Yes.

*Dr. Matthai.*—You are the only people who can supply.

*Mr. Venkatanaranappa.*—They are now taking about 200 to 300 tons a year.

*President.*—They are making acetone.

*Mr. Venkatanaranappa.*—They are making only a small quantity, because the synthetic acetone is cheaper and they are importing acetone.

*Dr. Matthai.*—Their requirement in peace time is about 300 tons.

*Mr. Venkatanaranappa.*—They are not taking the full 300 tons, because they are importing acetone partly. They are taking about 200 tons from us.

*Dr. Matthai.*—Of Methyl acetone you have given your estimate at 30,000 gallons.

*Mr. Venkatanaranappa.*—We can take the methyl acetone, denaturing grade and C. P. Methonol together.

*Dr. Matthai.*—All the three together in terms of crude.

*Mr. Venkatanaranappa.*—As a sort of alcohol products.

*President.*—But the prices vary.

*Mr. Venkatanaranappa.*—Last year the purchasers complained that we were selling them more of methyl acetone and they now want more of C. P. Methonol. That brought us a little more revenue. But the proportion can be varied in the manufacture.

*President.*—Take the alcohol products together.

*Mr. Venkatanaranappa.*—You can take them at one rupee a gallon.

*President.*—That is about 180,000 gallons a year.

*Mr. Venkatanaranappa.*—I think that the actuals are a little less this time.

*Mr. Mathias.*—The whole of that is exported?

*Mr. Venkatanaranappa.*—Practically.

*President.*—Why do you export it? Is there no market here?

*Mr. Venkatanaranappa.*—There is no market in India.

*President.*—About 600,000 gallons a year are imported.

*Mr. Venkatanaranappa.*—That is Java spirit. This is not methylated spirit.

*President.*—Cannot this be used for the same purposes as methylated spirit?

*Mr. Venkatanaranappa.*—No, I don't think so.

*Mr. Mathias.*—It may be used either for burning or in the lac industry.

*Mr. Venkatanaranappa.*—In the lac industry it can be used as a solvent. If we sold it as a substitute for methylated spirit we would not be getting one rupee a gallon. Further even the trace of acid that is there will have to be removed.

*President.*—It is used chiefly as a solvent.

*Mr. Venkatanaranappa.*—Yes.

*Mr. Mathias.*—As a solvent of what?

*Mr. Venkatanaranappa.*—For paints, varnishes, lacquers, etc.

*Mr. Mathias.*—It is all exported to Europe and used there.

*Mr. Venkatanaranappa.*—Yes.

*Mr. Mathias.*—Are there no factories in India which can use it?

*Mr. Venkatanaranappa.*—No.

*Mr. Mathias.*—In the lac industry, ten per cent. addition of this to the denatured spirit improves the solvent qualities.

*Mr. Venkatanaranappa.*—We wrote to all the chemical factories but nobody has taken to it. Sometimes the soap factories take small quantities of it. Somehow in India the sale is very small.

*Dr. Matthai.*—Is your export mainly concerned with denaturing ingredients?

*Mr. Venkatanaranappa.*—In England it is used for denaturing.

*President.*—Is your export mainly to Great Britain?

*Mr. Venkatanaranappa.*—Yes, because there is the safeguarding duty on synthetic methanol.

*President.*—The 'Safeguarding' duty is going.

*Mr. Venkatanaranappa.*—It has not gone yet. If it goes, we will have to change our methods.

*President.*—It would be better for you if the safeguarding duties go.

*Mr. Venkatanaranappa.*—So far as methanol is concerned we would get two or three annas less.

*President.*—Why?

*Mr. Venkatanaranappa.*—Because ours is a natural product and there is no duty on it whereas synthetic methanol which comes from Germany has to pay a duty.

*Mr. Mathias.*—You will have to wait for the artificial silk industry in India.

*Mr. Venkatanaranappa.*—Yes.

*President.*—You prepared this statement for me.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Your own accounting is rather different.

*Mr. Venkatanaranappa.*—We took Rs. 30 as the value of charcoal and charged it to the blast furnace.

*President.*—Now, I am not going into that.

*Mr. Venkatanaranappa.*—No.

*President.*—What about credits.

*Mr. Venkatanaranappa.*—They are a little less.

*President.*—In your estimate for 1929-30 you have taken 180,000 gallons.

*Mr. Venkatanaranappa.*—150,000 gallons would be nearer the mark at present.

*President.*—At one rupee a gallon?

*Mr. Venkatanaranappa.*—Yes.

*President.*—That would be Rs. 15 lakhs.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Then comes creosote.

*Mr. Venkatanaranappa.*—They are now taking about six to eight thousand gallons a month. You may take it that they will take about 90,000 gallons a year.

*President.*—I am talking of your production.

*Mr. Venkatanaranappa.*—We have got a certain amount of latitude in these products.

*President.*—Can we take 100,000 gallons a year?

*Mr. Venkatanaranappa.*—You may take 90,000 gallons.

*Dr. Matthai.*—Do the Mysore Railways take it?

*Mr. Venkatanaranappa.*—The Forest Department takes it. Though we have given ten annas in the estimate, you may take the price at twelve annas a gallon. That would be about Rs. 67,500.

*President.*—Then, we come to black paint, creosote and pitch.

*Mr. Venkatanaranappa.*—What is the amount that I have given you?

*President.*—Rs. 75,000.

*Mr. Venkatanaranappa.*—For the three of them?

*President.*—Yes.

*Mr. Venkatanaranappa.*—You may take Rs. 35,000.

*President.*—As regards pipes you have taken 4,000 tons of pig iron.

*Mr. Venkatanaranappa.*—I think that this is based on 70 tons a day, that is more than 25,000 tons.

*President.*—How much is it?

*Mr. Venkatanaranappa.*—As regards pipes you have got a credit of Rs. 6 lakhs.

*President.*—Rs. 6,15,000.

*Mr. Venkatanaranappa.*—We can make 10 tons of pipes now. At present we are getting Rs. 5 lakhs.

*President.*—At Rs. 120?

*Mr. Venkatanaranappa.*—Yes. That comes to Rs. 4.32 lakhs.

*President.*—Then there are irrigation pipes.

*Mr. Venkatanaranappa.*—About 3 tons a day or 1,000 tons a year. You can take the price at about Rs. 80.

*President.*—The total for all by-products comes to Rs. 11 lakhs.

*Mr. Venkatanaranappa.*—I gave you Rs. 12 lakhs. Now it is a little less.

*President.*—Those are your realisations.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Now as regards total costs?

*Mr. Venkatanaranappa.*—As against Rs. 18 lakhs you can take Rs. 17 lakhs—one lakh less.

*President.*—What are your actual costs?

*Mr. Venkatanaranappa.*—Roughly Rs. 17 lakhs last year. We produced 21,000 tons.

*President.*—This is your revised estimate. That is what it comes to.

*Mr. Venkatanaranappa.*—Yes, a revised estimate based on actuals.

*President.*—What is the total actual cost of production?

*Mr. Venkatanaranappa.*—Rs. 17 lakhs.

*President.*—If you divide Rs. 6 lakhs by 21,000, it comes to Rs. 28.57. Shall we take Rs. 29?

*Mr. Venkatanaranappa.*—You can take Rs. 23.

*President.*—With depreciation the works cost comes to Rs. 51.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Profit is Rs. 26. The total fair selling price comes to Rs. 77. But you are actually getting Rs. 48.

*Mr. Venkatanaranappa.*—Yes.

*President.*—You are not even covering your depreciation?

*Mr. Venkatanaranappa.*—No.

*President.*—You will just cover it if you get the theoretical price.

*Mr. Venkatanaranappa.*—Yes.

*President.*—This disposes of the pig iron part.

*Mr. Venkatanaranappa.*—Yes.

*President.*—I want to know, in order to enable you to get Rs. 51 instead of Rs. 48, what proposals do you make apart from your steel project. Supposing this duty is retained what do you suggest by which you can at least cover your depreciation? That is what I want to know.

*President.*—You have got your geographical market. The railways purchase on the present year's figures another 20,000 tons; they can't give you 10,000 tons out of that.

*Mr. Venkatanaranappa.*—I want 12,000 tons including this five, that is only 7,000 tons more.

*President.*—Even 7,000 tons out of 20,000 would be an unfair demand to make on them. They may say these other people produce more than you do.

*Mr. Venkatanaranappa.*—The conditions are different. We produce it at a higher cost: we are a new concern only recently started.

*President.*—What is your actual proposal? What is it that would enable you to get your Rs. 51 a ton for all your production?

*Mr. Venkatanaranappa.*—On the pig iron side we have still got 10,000 tons.

*President.*—You export 10,000 tons for which you are getting Rs. 42. You have got an export market. Supposing the Government of India gave



you a higher price, you would lose your export market and then it would be very difficult for you to build it up again.

*Mr. Venkatanaranappa.*—We don't look forward to building it up again. If for five years we get a local market possibly we could convert the pig iron to a more readily saleable form.

*President.*—What is the proposal that we are to make, say, for the next five years because the statutory enquiry comes in after that.

*Mr. Venkatanaranappa.*—We don't want it for more than five years.

*President.*—There must be some proposal that we can reasonably put forward before the Government.

*Mr. Venkatanaranappa.*—We want this 12,000 tons including the 5,000 tons to be guaranteed to be purchased by Government.

*President.*—You can't use the term guarantee in connection with Government! But you might say to Government that for the next five years it should be made possible for you to sell another 7,000 tons outside your geographical market at a rate which would give you Rs. 51 at Bhadravati. What is the freight to Calcutta?

*Mr. Venkatanaranappa.*—About Rs. 20.

*President.*—It is higher than Tata's rate.

*Mr. Venkatanaranappa.*—Tata's rate to Madras is Rs. 16. They get the benefit of 1/15th of a pie which nobody else gets on the B. N. Railway portion. That is a great handicap to us. That is another disadvantage.

*President.*—Their agreement expires in 1932.

*Mr. Venkatanaranappa.*—I don't know what is going to happen.

*President.*—What it comes to is that the East Indian Railway should pay you about Rs. 75?

*Mr. Venkatanaranappa.*—Rs. 72 or Rs. 73 was the price they were paying three years ago. Supposing we stopped producing pig iron they would have to pay Rs. 72 or Rs. 73 to the Indian Iron and Steel Company. The only reason they have reduced their price is our competition.

*President.*—The Great Indian Peninsula Railway gives you orders for the whole of their requirement?

*Mr. Venkatanaranappa.*—Yes. There again we are getting Rs. 51 because we are so closely situated. This year we have got only Rs. 49 from the Great Indian Peninsula Railway because we have to quote a price in competition with what the combine is likely to quote.

*President.*—If the demand of the Government railways outside your geographical area is only 20,000 tons they will find it very difficult to give you 7,000 tons.

*Mr. Venkatanaranappa.*—If you take the average of three years it is very much more. The East Indian Railway purchased 60,000 tons last year.

*President.*—What is it used for?

*Mr. Venkatanaranappa.*—For railway sleepers. I don't know what has happened: There were strikes in the Lillooah workshops and they might not have made use of much pig iron and placed orders for sleepers outside. I think just before the East Indian Railway were handed over to Government they had a big stock of pig iron so that their average purchase is more. You cannot base it at 20,000 tons.

*Dr. Matthai.*—Apart from that, would these proposals that you make about the by-products help you substantially?

*Mr. Venkatanaranappa.*—They are not worth while considering at all at present. The only way in which Government can help us is by the purchase of pig iron and possibly also by placing their orders for pipe requirements—they might help us.

*President.*—At present you sell all your pipes to the Mysore Government?

*Mr. Venkatanaranappa.*—We are also selling outside.

*President.*—How much out of your 4,000 tons is sold in Mysore?

*Mr. Venkatanaranappa.*—Outside we sold about 2,000 tons. The thing is, this order is not a regular one and when they take up a big project of water supply we may get an order for 2,000 tons in one year and perhaps nothing next year.

*President.*—Do you expect a rise in the price of pipes?

*Mr. Venkatanaranappa.*—Unfortunately not.

*President.*—Then your proposal simply comes to this that Government should purchase pig iron from you for the East Indian Railway. That is really what it comes to?

*Mr. Venkatanaranappa.*—Yes, regularly for five years and for the Great Indian Peninsula Railway also.

*President.*—And after five years?

*Mr. Venkatanaranappa.*—By that time we will be somehow on our feet. There are these possibilities. As I told you, the wood distillation industry has been hard hit not only here but in America also and the manufacturers have all joined together and are making frantic efforts for finding more profitable avenues for the use of tar and its derivatives and also m . . . We are in touch with them but it will take some time before we can get a higher return and we have not quite decided about the manufacture of acetic acid here. If that comes about that will give us another three to four lakhs of rupees. There the position is that the Forest Products Chemical Company wanted samples of our products and we sent them samples. They first advised us that it would not pay to establish a factory here. Now we have got a cable recently that it might pay us to do so. We will have a ready market for acetic acid partly in the Malay States and partly in India. That will give us at least another Rs. 4 lakhs if the scheme is successful.

*President.*—Then your pig iron proposition would be a paying one?

*Mr. Venkatanaranappa.*—Yes. In regard to steel the whole position is this. One advantage we will have in making commercial sections is that we will be assured of a local market and then electricity coming to Bhadravati will give us the benefit of a lakh of rupees on our present expenditure and that will mean Rs. 5 a ton on pig iron. These are the two advantages and so far as we have been able to go into the question we don't see why we should not be able to manufacture at a rate which is competitive. Electricity is very cheap, educated labour is comparatively cheap. I see no reason why we should not be able to manufacture steel at a competitive price.

*President.*—You are getting for pig iron an average price of Rs. 48 now.

*Mr. Venkatanaranappa.*—With that average price we have built a stock of 24,000 tons of pig iron. At the charcoal iron price it is impossible to export more than 4,000 to 5,000 tons to America and specially when the Swedish charcoal iron prices have been reduced to clear their own stocks.

*President.*—Supposing you sold at Rs. 42 f.o.r. Bhadravati can you sell it in India?

*Mr. Venkatanaranappa.*—No, because this is not for foundry use. They want high silicon iron in India.

*President.*—But I understood that you were disposing of all this?

*Mr. Venkatanaranappa.*—We are trying to. We might have sold some from the stocks but we have added to the stock.

*President.*—What are your total sales just now?

*Mr. Venkatanaranappa.*—This year it is going to be 20,000 tons. Last year we sold only 16,000 to 17,000 tons.

*President.*—Supposing you got these railway orders in your geographical market and you had that other market of 5,000 to 6,000 tons?

*Mr. Venkatanaranappa.*—Then we can sell about 20,000 tons surplus.

*President.*—You get an average price of Rs. 48; the whole point therefore is whether by going into steel you will be able to recover more than Rs. 48

for the whole of your pig iron output. Supposing I assumed that your estimate is correct, you are charging Rs. 40 and therefore straight-off you lose Rs. 8 on your pig iron. That is a point I have not been able to follow. If you are getting Rs. 48 on an average on your output of pig iron why should you then charge it as Rs. 40 to steel?

*Mr. Venkatanaranappa.*—Rs. 48 is not on the output; Rs. 48 is on the sales made and so far they have not come up to the output.

*President.*—When you get 5,000 tons from the railways?

*Mr. Venkatanaranappa.*—This year we will get 7,000 tons.

*President.*—Quite true. I am trying to point out to you that there is a flaw in the estimate. When you are getting Rs. 48 on an average you want to sell to your works at Rs. 40. That is difficult for me to follow: Why should you sell at Rs. 40 to the works when you can get Rs. 48 that is the point.

*Mr. Venkatanaranappa.*—You assume that Rs. 48 is a certain figure.

*President.*—There can be nothing certain but supposing you got this 5,000 tons from the railways you would be able to dispose of 20,000 tons. The position now is this that you will be losing Rs. 8 to start with on your calculations.

*Mr. Venkatanaranappa.*—Yes.

*President.*—That is one point. Then you have given Rs. 94-8-0 as your cost.

*Mr. Venkatanaranappa.*—I personally believe these costs will be considerably reduced.

*President.*—Taking pig iron at Rs. 40. If you take pig iron at Rs. 48—that is what you ought to take it at—the cost of pig iron will go up by 25 per cent. or so.

*Mr. Venkatanaranappa.*—It would increase by another Rs. 10.

*President.*—That will bring up the cost to Rs. 104 without the full depreciation on pig iron.

*Mr. Venkatanaranappa.*—Taking all that it will be Rs. 114.

*President.*—Even if you are getting Rs. 48 for the pig iron that means you are not recovering your full depreciation.

*Mr. Venkatanaranappa.*—This product is selling in Mysore at Rs. 140 to-day.

*President.*—This comparison that you make with Tatas 1925-26 costs does not hold good at all now.

*Mr. Venkatanaranappa.*—That is only to give you an idea.

*President.*—I am just trying to show that the same difficulty may arise as regards your steel that you are now having as regards pig iron. Our future estimate of Tatas works cost was Rs. 77 for bars and the average for the period was Rs. 88. Their actual cost in March 1928 was Rs. 77-60. Our estimate was a very conservative one.

*Mr. Venkatanaranappa.*—Taking pig iron at Rs. 26.

*President.*—Pig iron was Rs. 23. Rs. 77 is what we have taken as their future average works cost. If we take structurals, it will be less.

*Mr. Venkatanaranappa.*—Let us take bars and flats.

*President.*—The actual cost for bars in March 1928 was Rs. 77-60. They have already reached our future estimate. You may therefore be certain that there will be a reduction of at least Rs. 8 to Rs. 10 on that unless coal goes up. Theirs is Rs. 77 as against your works cost of Rs. 104.

*Mr. Venkatanaranappa.*—Not if we base it also on the cost of pig iron. They are selling pig iron at a higher price even for export.

*President.*—Your depreciation will then go up. Their Rs. 23 is works cost and excludes everything. For profit and overhead we have allowed

Rs. 33 a ton. That will make their fair selling price Rs. 110 which is a very conservative estimate on the actual figures just now. You cannot take it at more than Rs. 110 safely.

*Mr. Venkatanaranappa.*—The position at present is that Tatas are not selling any bars in Mysore.

*President.*—I am taking a rather long view of the thing; supposing the steel industry expands, you may take it that the bars may be sold at Rs. 100 or below at the works.

*Mr. Venkatanaranappa.*—Yes.

*President.*—Supposing the same position arose as regards steel as has arisen in regard to the pig iron. The result may again be the same. I am just trying to point out to you so that you may consider the question for yourself. Then our estimate of the c.i.f. price of continental steel was Rs. 90 a ton and of the British Rs. 108. Supposing there is not much improvement in the foreign prices and the Steel Company's fair selling price is Rs. 100 even with the British price at Rs. 108 and Continental price at Rs. 90 on an average the Government may say that it may realise Rs. 100 by selling half British and half Continental and therefore the protection may go. You should be prepared to sell in competition against the Continental at Rs. 90 and British at Rs. 108 c.i.f.

*Mr. Venkatanaranappa.*—Then there is the revenue duty.

*President.*—The revenue duty may be abolished, when no protection is required.

*Mr. Venkatanaranappa.*—That will be Rs. 100 at the port and Rs. 115 at Mysore. Rs. 6 per cent. would be the fair selling rate. We will just work up to that.

*President.*—Even if you take pig iron at Rs. 48, your position would be no better than now.

*Mr. Venkatanaranappa.*—Yes, if the protective duty was removed.

*President.*—If you are able to show that you can compete against imported steel at Rs. 90 at the ports, you might be fairly safe provided also there were no technical difficulties.

*Mr. Venkatanaranappa.*—The Government of Mysore derive a further advantage in that the works will use and pay for power which is not being now used. If that is not taken into consideration, then it is all right.

*President.*—Rs. 90 at the port. You must get at least Rs. 48 for the pig iron.

*Mr. Venkatanaranappa.*—Taking Rs. 48, it works out to Rs. 104. About Rs. 20 is the cost of electricity. Besides, we will get the benefit of a lakh of rupees by electricity coming in.

*President.*—I am just trying to point out that what you should aim at is Rs. 90 as against this Rs. 114 taking pig iron at Rs. 48.

*Mr. Venkatanaranappa.*—Yes.

*President.*—There is one other point and that is you have not allowed anything for wastage.

*Mr. Venkatanaranappa.*—Yes, we have.

*President.*—I don't understand this figure of loss that you are talking about.

*Mr. Venkatanaranappa.*—One is the loss in the converter and the other is in the rolling mill.

*President.*—That is to say you have got to charge 2,688 lbs. against Tatas 2,456 lbs.

*Mr. Venkatanaranappa.*—Yes, because they use some scrap.

*President.*—I am not going into that at all, because these figures are quite hypothetical. I am looking at it purely from the commercial aspect that you cannot take less than Rs. 48 for your pig iron.

*Mr. Venkatanaranappa.*—Yes, if we take Rs. 48, it becomes Rs. 114. But as I said we gain by electricity coming to Bhadravati Rs. 8 on 12,000 tons,—so that it comes down again to Rs. 106.

*President.*—At present with the protective duty remaining if you reach these costs, you may be all right, but you cannot assume that the protective duty will remain.

*Mr. Venkatanaranappa.*—It would help us if the duties continue for 4 years.

*President.*—You have got to satisfy yourself whether there is suitable ore available and whether the process is all right.

*Mr. Venkatanaranappa.*—We have enough ore. We have recommended the standard process. We have got some of our sample steel rolled and the rolling loss is only 10 per cent.

*President.*—Besides you start with an initial disadvantage of about Rs. 25.

*Mr. Venkatanaranappa.*—Yes in the price of pig iron. Our cost of conversion must be considerably less than this.

*Dr. Matthai.*—Does this Rs. 104 include depreciation on steel?

*Mr. Venkatanaranappa.*—Yes and interest.

*President.*—Your cost of conversion is Rs. 46 against Tatas Rs. 54.

*Mr. Venkatanaranappa.*—There is the other alternative of putting up a rolling mill at Bangalore. The extra expenditure involved would be only about Rs. 5 lakhs.

*President.*—It is for you to consider.

*Mr. Venkatanaranappa.*—The whole point is that we have spent so much money and I think it would be worth while to spend another Rs. 8 lakhs.

*President.*—I am not prepared to express any opinion on the estimated cost of the plant. The whole point is whether you would do better by spending this extra sum whatever it may be.

*Mr. Venkatanaranappa.*—In 4 years we are likely to do very much better.

*President.*—I may tell you that making steel in a small furnace is a very different thing. It takes considerable amount of time to produce it on an economic scale. Look at Tatas experience of the duplex. They have been practically 6 years at it and even now their results are not what they expect.

*Mr. Venkatanaranappa.*—So far as this is concerned, we can assure you that we can do it. It is difficult to prove but we feel that we can do it. We have been blowing the converter satisfactorily and there has been absolutely no difficulty and if our costs are not less it is because of the limitation of the one ton converter.

*President.*—You have got to erect the steel plant, you have got to train your men and do other things. It will take some time. 4 years is not such a long time as you think.

*Mr. Venkatanaranappa.*—Though it might be theoretical knowledge, I think there are a number of people on the staff who have studied all the literature. I have the confidence that our men will be able to do it.

*President.*—But books do not roll steel.

*Mr. Venkatanaranappa.*—I have got full confidence that our men will be able to do it within a very short period of time. They have had some practical experience also. We have surmounted a lot of difficulties in the original plant.

*President.*—Pig iron is a very much simpler thing.

*Mr. Venkatanaranappa.*—When we began to make pig iron people had similar fears.

*President.*—It is now six years and still you have not quite got the full output.

*Mr. Venkatanaranappa.*—We have just got it. I admit that a certain amount of caution is necessary, but we have got the confidence that we will be able to do it all right.

*President.*—I do not propose to go any more into the question of steel. I have just given you my general idea. It is simply looking at it from the commonsense point of view. It struck me that there were some points to which I would draw your attention.

*Mr. Venkatanaranappa.*—As I told you at the beginning we are willing to satisfy you and other reasonable people who have doubts.

*President.*—I am not able to form any judgment on some points, for example the quality of your ore, the quantities available, its suitability for the process you adopt and the like without a fuller examination.

*Mr. Venkatanaranappa.*—We will get expert opinion as regards ore. So far as that is concerned, we have got our own geologists.

*President.*—Then there is the process and the actual cost at your works. Supposing the process is a good one, for the kind of ore that you have got, then it becomes a question of costs.

*Mr. Venkatanaranappa.*—In regard to the costs, this will be our difficulty. Supposing we get the costs from a firm in Europe, we can't decidedly compare. Somebody has got to make some reasonable deduction.

*President.*—Quite so.

*Mr. Venkatanaranappa.*—What we can do is to get reliable costs from firms who are adopting this process from two or three countries, say Sweden, Germany, England and America. We will get the data.

*President.*—An important item is the cost of electricity.

*Mr. Venkatanaranappa.*—The cost of electricity can be decided by Government. After all, it is a book adjustment.

*President.*—I am not talking of the cost per unit, but the quantity of electricity that is consumed.

*Mr. Venkatanaranappa.*—We will give you expert advice on that. The largest amount will be 800 units.

*President.*—Don't assume that I am against the manufacture of steel under proper conditions.

*Mr. Venkatanaranappa.*—Unfortunately some people have assumed that you are against it but I know that you are not.

*President.*—I am looking at the figures as they stand and the figures do not suggest that if you start manufacturing steel you will necessarily be better off than you are doing now from the financial point of view.

**The Tata Iron and Steel Company, Limited.**

A.—WRITTEN.

(1) *Letter No. G-1331/23, dated the 14th August, 1923.*

With reference to your letter No. 34-T, of the 8th instant, we wish to inform you that our reply to your letter No. 672 is being sent by the Indian Metallurgical Association, of which we are members. We understand that their submission to you has already been despatched.

(2) *Statement handed by the Tata Iron and Steel Company, Limited, on the 26th November 1923.*

PRICE OF PIG IRON F.O.B. CALCUTTA.

Quarter ending.	No. 1.	No. 2.	No. 3.	No. 4.
	Rs.	Rs.	Rs.	Rs.
June 30th, 1925 .	48	47	46-8	46
Sept. 30th, 1925 .	56	54-8	53-8	52
Dec. 31st, 1925 .	56	54-8	53-8	52
March 31st, 1926 .	68	64	62	60
June 30th, 1926 .	68	66	64	62
Sept. 30th, 1926 .	68	66	64	62
Dec. 31st, 1926 .	80	78	76	74
March 31st, 1927 .	71	69	67	65
June 30th, 1927 .	71	69	67	65
Sept. 30th, 1927 .	69	67	65	63
Dec. 31st, 1927 .	69	67	65	63
March 31st, 1928 .	69	67	65	63

(3) *Letter No. G-256/29, dated 4th/18th February, 1929, from the Tata Iron and Steel Company, Limited.*

In our evidence before you we stated that we would endeavour to make some arrangement whereby the complaint of the Bhadravati Iron Works that we or other Pig Iron producers in India were competing unfairly with them in their own area might be satisfactorily met. We have made the following offer to the Bhadravati Iron Works: We will give them our standard quotations for Ceylon, Mysore, Madras, South of Bezwada and the Hyderabad State and we will guarantee to them that we shall not go below these quotations for special enquiries for this area. This should enable them to obtain all orders emanating from this area which they are prepared to supply at a cost slightly lower than the cost of importing pig iron from abroad, as our standard quotations are based on the import price. We understand from the Bhadravati Iron Works that they find some difficulty about accepting such a proposal and they inform us that they require a market for 12,000 to 15,000 tons and that this cannot be sold in the area mentioned. We are afraid we cannot get the other members of the pig iron pool to agree to any longer area and considering the comparative size of the Bhadravati plant and the fact that the whole of the Indian demand at standard prices is about 36,000 tons a year, it seems unreasonable for them to expect one-third of this market. We might point out that the Indian Iron and Steel Company export about 319,000 tons of their production and that we ourselves export about

78,000 tons of our production of pig iron for sale. It would hardly be reasonable to claim that the Bhadravati Iron Works should be placed in a more favourable position than our own Company in this respect. They have requested us to give them the whole of the Bombay and Ahmedabad market but we do not think our Board of Directors could be expected to agree to such a proposal. We will, however, stand by our present offer at any time that they may wish to accept it and this should ensure there being no unfair competition in their own territories.

(4) Letter No. S/1575, dated 18th March, 1929, from the Tata Iron and Steel Company, Limited.

Herewith the figures asked for by the Tariff Board at the last examination:—

	Tons.
Quantity sold in India—	
1925-26 . . . . .	39,611
1926-27 . . . . .	43,626
1927-28 . . . . .	32,040
1928-29 (11 months) . . . . .	26,302
Quantity exported—	
1925-26 . . . . .	79,150
1926-27 . . . . .	127,920
1927-28 . . . . .	78,240
1928-29 (11 months) . . . . .	103,424
	Rs. A. P.
Prices realised in India—	
1925-26 . . . . .	47 0 11
1926-27 . . . . .	50 3 1
1927-28 . . . . .	50 2 9
1928-29 . . . . .	49 4 0
Prices realised on export—	
1925-26 . . . . .	40 5 9
1926-27 . . . . .	38 4 7
1927-28 . . . . .	39 11 8
1928-29 . . . . .	38 4 4



## THE TATA IRON AND STEEL COMPANY.

B.—ORAL.

**Evidence of Messrs. J. C. K. PETERSON, S. K. SAWDAY and D. M. MADAN recorded at Bombay on Monday, the 26th November, 1928.**

### *Pig Iron.*

*President.*—The point about pig iron is this. It has been more or less accepted by Government that as far as possible duties on raw materials—and semi-manufactured articles which are used as raw materials—should be removed if revenue considerations permit. Now as regards pig iron, there is a duty of 10 per cent., but there is no revenue to speak of.

*Mr. Peterson.*—Because there is no import.

*President.*—Yes, except at some outlying ports where a very small quantity is imported. Therefore the revenue duty is really acting as a protective duty. It is unsound to have a protective duty when it is not required. The proposal therefore is whether time has not come for the removal of that protective duty. I think that in the earlier enquiries the Steel Company admitted that there was no necessity whatsoever for any duty on pig iron.

*Mr. Peterson.*—I think that what we pointed out at that time was that India had become an exporting country in respect of pig iron and that consequently the duty had no effect.

*President.*—You will also see that in making our future estimates we have taken only a very small profit into account, viz., Rs. 15 above the works cost. Therefore the removal of the duty would not in any way affect the scheme of protection.

*Mr. Peterson.*—It would not affect the scheme of protection, but it would affect the pig iron producers. Apart from that, it would only be fair to say that the Steel Company had always said that the raw material required for manufacturing machinery should be free as far as possible. That would be to the interest of the Steel Company.

*President.*—The only concern that does manufacture pig iron and at present is not able to carry on business profitably is the Mysore Iron Works. Of course, in making any proposal we will have to consider how far the Bhadravati Iron Works might be affected. Though they are not situated in British India, still we are bound to consider the effect of the removal of the duty on pig iron upon them.

*Mr. Peterson.*—We are very closely connected with the Bhadravati Iron Works.

*President.*—If the Bhadravati Iron Works do not derive any benefit out of this duty, then there is no point in keeping it on.

*Mr. Sawday.*—Surely they will get a lower price without the duty.

*President.*—There is no market. So, there is no question of getting less price. The only justification—theoretical justification—for retaining the duty would be that this Iron Works was benefiting by the duty on pig iron. But if the Board finds that it cannot and does not benefit by it, then it stands to reason that there is no ground whatsoever for keeping it on. Further Government get no revenue from it.

*Mr. Sawday.*—The free trader may say that there should be no protective duty, but it is not right to suggest that the duty on what is made in the country should be less than the general revenue duty.

*Dr. Matthai.*—Pig iron is used in the manufacture of machinery and machinery is essential for the industrial development of the country.

*Mr. Sawday.*—The effect of the duty on machinery is really negligible.

*President.*—The whole point is this. As it happens, we are now taking pig iron into consideration. By the removal of the duty on pig iron and other raw materials, the machinery people may be greatly benefited. The effect of the removal of the duty on pig iron may not come to much but the cumulative effect of the removal of the duties on all raw materials may be very great.

*Mr. Sawday.*—It may be better to subsidise the making of machinery to whatever extent the Tariff Board may think it reasonable and stick to the duty.

*Mr. Peterson.*—Mr. Sawday's point is this. It is quite true that a protective duty is not required on pig iron, but it is not fair to treat pig iron differently from other articles imported into the country. If there is a general level of 15 per cent. duty on all imported articles, it is unfair to penalise an Indian industry because it happens to be more or less successful.

*President.*—The whole point is this that a revenue duty is for revenue purposes only.

*Mr. Sawday.*—You are finding various industries springing up behind the 15 per cent. duty. As soon as they have sprung up, are you going to take it away from them?

*Mr. Peterson.*—So far as we are concerned, pig iron is more or less a by-product because steel is protected and our existence depends on steel.

*President.*—We had a controversy, you remember, sometime ago about this protection of steel. The Bengal Iron Company said that they were not getting a good price for their pig iron because you were underselling them. Now, the Bhadravati Iron Works make the same complaint against you.

*Mr. Peterson.*—As a commercial proposition, the manufacture of pig iron can never be wholly successful in Bhadravati. Pig iron is also a by-product to them.

*President.*—The position is precisely the same. What happens is this. You sell your pig iron at a price which includes the duty in the area round about Calcutta. That enables you to underquote the Bhadravati Iron Works in the market which they claim as their own.

*Mr. Peterson.*—When they say "we sell", they mean that others sell. As a matter of fact, we do not sell in the area.

*President.*—Yes, it is the others that sell. The maintenance of the duty enables you to dump your pig iron.

*Mr. Peterson.*—One practical consideration is this that it won't make any difference if the duty is removed. If pig iron is produced in excess of the demand, it will still be dumped because it must be sold. Normally a very large quantity has to be made and sold at any price that can be got for it.

*President.*—There is the other consideration. The railways are round about Calcutta. They pay you a price including the duty. Can you give us the quantities of pig iron which the railways use?

*Mr. Sawday.*—A few hundred tons each. The big users are the North-Western Railway and the East Indian Railway. The former had a long term contract with us, and the East Indian Railway buy it for sleepers.

*President.*—How much do the East Indian Railway buy?

*Mr. Sawday.*—40,000 to 50,000 tons.

*President.*—And the Eastern Bengal Railway?

*Mr. Sawday.*—About 1,000 tons.

*President.*—On 50,000 tons you get Rs. 7 to Rs. 8 more per ton than you would otherwise get. Would it not be better for the East Indian Railway to buy 8,000 to 10,000 tons from the Bhadravati Iron Works and save Rs. 4 lakhs a year?

*Mr. Sawday.*—They would buy it from the Bengal Companies in any case.

*President.*—It is a matter of business. Supposing the case is put to the Government of India. The East Indian Railway is a Government concern.

You pay it Rs. 6 lakhs more in a year on account of pig iron than you would pay if the duty was removed. It will be cheaper for Government to provide that the Bhadravati Iron Works, assuming that it was entitled to any relief, should get a higher price and save some lakhs a year.

*Mr. Sawday.*—That would be all right as regards last year. But as regards this year it would not be, because we did not get a special price this year.

*President.*—If we are not charging full duty to the railways then there is no point in keeping the duty.

*Mr. Sawday.*—We submit that there is no point in taking it off. There is nothing which the ordinary foundry could make which it is not now making. Putting the price of pig down would not increase their business. Foundries already make in India all that can be made. The high freight on castings and their fragility make it difficult to import them.

*Mr. Peterson.*—The price of the finished material will drop by the fall in the price of pig iron.

*President.*—As far as the manufacture of pig iron is concerned, you have got really no ground to complain except that the duty is there and should not be removed.

*Mr. Peterson.*—That is what it comes to.

*Mr. Sawday.*—It is a bad principle to remove it.

*President.*—You do not suggest that there is any real economic reason for it.

*Mr. Peterson.*—No. We have always said that there is no case for protecting pig iron. At the same time we say that it is a bad principle to remove the duty on pig iron.

*President.*—The whole thing is this that if industries are to be encouraged in the country, as far as possible duties on all raw materials should go. Whether we start with pig iron, or chemicals or something else, it really makes no difference.

*Mr. Peterson.*—Both the Indian Iron and Steel Company and ourselves want to encourage the use of Indian pig iron.

*President.*—It would be an encouragement if you gave up the duty.

*Mr. Sawday.*—I don't see what other industries would come into the country which are not here now.

*Dr. Matthai.*—You will admit that the removal of the duty is going to make very little difference either to your sales in India or to your exports.

*Mr. Sawday.*—That is true, as regards tonnage.

*Dr. Matthai.*—So, when you ask for the retention of the duty on pig iron, you are also doing it on theoretical grounds.

*Mr. Sawday.*—I think that theoretically our request for the retention of the duty is sounder than your suggestion for the removal of the duty. As soon as you find somebody establishing himself behind the 15 per cent. duty, you say at once "remove the duty".

*President.*—If protection is really needed, if you can show that protection is really needed, then we can say that protection is needed and allow the duty to remain on.

*Mr. Sawday.*—Your principle may result in industries which exist with 15 per cent. being ruined without it.

*President.*—In this particular case, does the duty act as a protective duty or not?

*Mr. Sawday.*—It does act as a protective duty.

*President.*—Now the question is: is protection needed for pig iron? That is the whole point. The position is very simple.

*Mr. Sawday.*—We admit that.

*Mr. Peterson.*—I would not say that it acts as a protective duty. It counteracts the disadvantages in freight and enables the Indian manufacturer to compete more fairly in different parts of India.

*Dr. Matthai.*—As far as the Bhadravati Iron Works is concerned, the Indian Iron and Steel Company are prepared to sell pig iron in their economic area at a price which is sometimes lower than your export price.

*Mr. Peterson.*—That would naturally follow.

*Mr. Sawday.*—We are already getting a good deal less than the cost of import.

*President.*—There are three members of the Federation—the Bengal Iron, the Indian Iron and Steel and yourselves.

*Mr. Peterson.*—It is not exactly a Federation. It is an agreement.

*President.*—You must call it by some name—call it a combination if you like. The Metallurgical Association have supplied us with prices. We asked for the average realised prices in India and the export prices. What was the price of pig iron in India for 1927-28?

*Mr. Sawday.*—You have got all the information there.

*President.*—The f.o.b. export price was Rs. 39-6-1 in 1927-28, whereas the average price realised in India was Rs. 50-4-1.

*Mr. Sawday.*—Yes.

*President.*—Was that f.o.r. works?

*Mr. Sawday.*—Yes. That was the average price realised on Indian sales only.

*President.*—What are your prices for the different ports?

*Mr. Sawday.*—These are our prices (handed in a statement). They are practically the same for all ports.

*President.*—No. 1 is foundry.

*Mr. Sawday.*—Yes, that is the best. It is Rs. 69 per ton.

*President.*—You have compared it with No. 3 Cleaveland.

*Mr. Sawday.*—Yes.

*President.*—What is the c.i.f. price including the duty?

*Mr. Sawday.*—Rs. 74-8-0.

*President.*—If you deduct Rs. 7-8-0, you get Rs. 67 whereas you are getting Rs. 69.

*Mr. Sawday.*—Yes.

*President.*—Does the Indian Iron and Steel Company get any higher price?

*Mr. Peterson.*—No. Some of these prices are higher than what they have got.

*President.*—How was it that in December 1926 it went up to Rs. 80?

*Mr. Peterson.*—We went up by Rs. 6. At that time we had sold very heavily, so we put our prices high. It is stationary since September.

*President.*—If you take the previous period—June 1926—it is in the neighbourhood of Rs. 68.

*Mr. Peterson.*—Yes, that is right. Then these three years we have sold 13,000 tons of basic iron.

*President.*—At what price?

*Mr. Peterson.*—Rs. 40 to Rs. 45, Calcutta. That would, of course, bring down our average realisation.

*President.*—I take it, at all the ports you sell at the same price, practically?

*Mr. Peterson.*—Yes.

*President.*—What is the freight from Tatanagar to the principal ports?

*Mr. Sawday.*—(Hands in a statement of freights to various ports.)

*Dr. Matthai.*—At present it will be roughly Rs. 12 from Bombay to Calcutta?

*Mr. Madan.*—It would be Rs. 15.

*Dr. Matthai.*—To Madras?

*Mr. Madan.*—Rs. 16.

*Dr. Matthai.*—So that Rs. 15 to Rs. 16 may be taken as the freight?

*Mr. Sawday.*—Yes, to Bombay and Madras respectively.

*President.*—Then out of this Rs. 69 we deduct Rs. 15, that leaves Rs. 54 f.o.r. works. Those people are getting about Rs. 40?

*Dr. Matthai.*—Last year they got no orders at all from the Madras and Southern Mahratta Railway because the Indian Iron and Steel Company were able to sell at Rs. 39 in one case and at Rs. 34 in another.

*President.*—Their case is that because you are able to get Rs. 69 f.o.r. Calcutta, you are able to sell at Rs. 54 per ton.

*Mr. Peterson.*—Bhadravati never complained about this to the Steel Company. In the case of railways we have to quote a price which enables us to get the order.

*President.*—Their whole position is that they have got a small advantage over you as regards freight in the Bombay and Madras markets and they are at no very great disadvantage further north, but that they don't seem to get the market.

*Mr. Peterson.*—They are getting quite a lot of the Bombay orders.

*President.*—Their case is that they are losing it now simply because they are being underquoted.

*Mr. Peterson.*—Not because of this.

*President.*—What is the average of the realization on all pig iron f.o.r. works so far as you are concerned?

*Mr. Peterson.*—Rs. 41-10-3.

*President.*—What was the amount of your total sales in India?

*Mr. Peterson.*—39,000, 43,000 and 32,000 tons.

*President.*—And exports?

*Mr. Peterson.*—79,150, 129,920 and 78,240 tons.

*President.*—So far as the foreign price is concerned the removal of the duty won't affect it at all?

*Mr. Peterson.*—No.

*President.*—Supposing the whole duty was removed as regards this 40,000 tons how much of it would be affected?

*Mr. Sawday.*—All except our long-term contract with the North Western Railway, and special quotations.

*President.*—Do you think the prices would be affected to the full extent of the duty?

*Mr. Sawday.*—Yes, if we are fully against imported prices.

*President.*—That is to say, you will lose about Rs. 7-8-0 a ton?

*Mr. Sawday.*—No, because we give these special prices in some cases. Approximately about half of our Indian sales would be affected.

*Mr. Peterson.*—The result would be that the price would fall by about Rs. 4 a ton.

*President.*—The total consumption in India is about 140,000 tons now?

*Mr. Peterson.*—Yes, about that.

*President.*—Of which you have 40,000 tons?

*Mr. Peterson.*—That includes Bengal castings.

*President.*—That is owned by the Bengal Iron and Steel Company.

*Mr. Peterson.*—That is a connected company.

*President.*—Therefore this means the total consumption of pig iron in India.

*Mr. Peterson.*—Yes. 40,000 to 50,000 for the East Indian Railway, 60,000 to 70,000 for the Bengal foundries and the rest would be bazar.

*President.*—Therefore the East Indian Railway is the biggest purchaser?

*Mr. Peterson.*—The Bengal foundries is the biggest.

*President.*—What is the total consumption of the railways taken together?

*Mr. Peterson.*—40,000 to 50,000 East Indian Railway *plus* not more than 7,000 to 10,000 tons for the rest on the outside.

*President.*—And you think other things being equal the price of the whole of that pig iron would have to be reduced?

*Mr. Peterson.*—I think only 7,000 to 10,000 tons will be unaffected.

*President.*—Then there is still less ground for keeping the duty if the Bhadravati Iron Works join this combine?

*Mr. Peterson.*—I don't know if they will. They have not asked to join.

*President.*—Do you think there are any insuperable difficulties? They are contemplating the manufacture of steel. We do not know whether it is a good proposition or not, but supposing they went on with that project, then in that case they will have no pig iron practically to sell?

*Mr. Peterson.*—Yes, very little.

*President.*—The question would then be merely to see, if a case was made out, in what way they should receive any assistance and I am asking you whether during this period, whilst they were contemplating the manufacture of steel, it should not be possible for them to join this combine and tide over this period.

*Mr. Peterson.*—It might be. We would be quite prepared to consider it, but they have never approached us because they consider their pig iron to be something special.

*Dr. Matthai.*—Their point is that if they can find a market for about 10,000 to 12,000 tons of pig iron; although they might not be able to make a profit they will be able to live. The difficulty in regard to the market has arisen largely because of the low price sales of the Indian Iron and Steel Company.

*Mr. Peterson.*—The simplest way would be for the federation to buy their output or make them a partner.

*Dr. Matthai.*—Or allocate a market to them.

*Mr. Peterson.*—They have not approached us at all and therefore it is really difficult for us to consider it.

*President.*—Then, at the same time, if something was done and then they were given time because it is not a question of very great urgency. It is really a part of Government's policy to remove the duty on raw materials, but nothing could be done when there is no point in it.

*Mr. Peterson.*—If the Mysore Iron Works will consult us we will see what we can do as regards some arrangement.

*President.*—If you could just find out what their views are and write to us confidentially we would await your letter.

*Mr. Peterson.*—We will.

*President.*—There is one point which is very important in this enquiry, and that is the question of freights. Of course, we are dealing just now with chemicals but supposing we came to the conclusion that freights must be reduced in the case of some of the industries, then we must show really in what way reduction of freights would be of benefit to the consumer as well as to the manufacturer. Take the case of steel, for instance. You have a production of 400,000 tons or 600,000 tons, but you have got a market for, say, 200,000 tons at present on this side, namely, Bombay, Karachi and the West Coast. Supposing you were to be secured that market by the reduction

of freights the point would arise, how much reduction in cost it would result in so that the price of the whole production would be reduced. Supposing the reduction is Rs. 10: the price of 600,000 tons of steel that you produce would be reduced by Rs. 10 and therefore to enable you to get another 200,000 what reduction in freight should take place? You would be able to give us figures on these lines. You can take any other single product instead of steel.

*Mr. Peterson.*—There are two very practical instances that occur in India, one as regards the Steel Company and the other as regards the Mysore Iron Works. Neither of the two companies could have existed but for the concessional rates in the matter of freight.

*President.*—That is, of course, a general proposition.

*Mr. Peterson.*—I would illustrate it by the difference in our old works and the new works, the consequent reduction in the actual costs and the consequent reduction in the price resulting from the increased capacity of distribution.

*President.*—The point is, a theoretical reduction of Rs. 10 would mean a reduction of Rs. 80 lakhs to the consumer. When it gets a reduction of Rs. 80 lakhs, theoretically he ought to be able to say "on these 200,000 tons I will give you so much". The railways being Government concerns the taxpayer and the consumer is pretty much the same and therefore it may pay him to give you a reduction in freight. It would cost him very much less than the steel would cost. It is on these lines that I would like you to give us figures. You can take the cost of transport on raw materials and everything. The question arises in the case of chemicals in a still more acute form because there are certain classes of chemicals for which the market in Calcutta is fairly big, but it has not got the raw materials: on the other hand in Bombay there are certain chemicals which have got a fairly big market but they also have not got sufficient raw materials. Therefore the idea is that each works must produce that class of product which it can produce on a large scale and it could then be distributed to the other markets. Take the case of sulphuric acid for instance. If you manufacture, say, 1,000 tons of sulphuric acid your cost would be, say, Rs. 50 a ton higher than if you manufacture 4,000 tons. But if you manufacture 4,000 tons, one single place will not absorb the whole quantity, and therefore it must be produced in that one place and transported from there to the other places and the nett result eventually would be that the tax-payer and the consumer would pay less. That is the point. If you could give us figures from your own industry it would be of great assistance to us.

**The Indian Iron and Steel Company, Limited.**

(1) *Letter No. 598/2650, dated the 13th August, 1928.*

We have the honour to acknowledge receipt of your letter No. 35-T, of 8th instant and in reply to refer you to the Indian Metallurgical Association's letter No. I.M.A.-34 of 7th August, 1928, which letter was addressed to you on behalf of the three Iron-producing Companies in India.

We have nothing more to add to what is stated in this letter.

(2) *Letter No. I. S./598, dated the 15th March, 1929, from the Indian Iron and Steel Company, Limited, Calcutta.*

**PIG-IRON IMPORT DUTY.**

As promised by Mr. Fairhurst, when giving oral evidence to your Board on the 8th instant, we have pleasure in giving below the following figures :—

	The Indian Iron & Steel Co., Ltd.	The Bengal Iron Co., Ltd.
	Tons.	Tons.
<b>1. Quantity of pig-iron—</b>		
<b>(a) Sold in India—</b>		
1925-26 . . . . .	44,764	6,158
1926-27 . . . . .	92,316	4,704
1927-28 . . . . .	84,695	21,603
<b>(b) Export from India—</b>		
1925-26 . . . . .	89	34,828
1926-27 . . . . .	1,87,056	5,144
1927-28 . . . . .	2,84,340	34,424
<b>2. Average price realised—</b>		
<b>(a) In India—</b>		
	Rs.	Rs.
1925-26 . . . . .	42 13 3	45 0 5
1926-27 . . . . .	47 5 4	46 13 2
1927-28 . . . . .	56 2 9	44 6 9
<b>(b) F.O.B. Port of Export—</b>		
1925-26 . . . . .	34 13 5	42 15 11
1926-27 . . . . .	38 0 0	42 11 8
1927-28 . . . . .	37 8 9	40 13 10



We also have pleasure in giving you similar figures for the 11 months ending February, 1929.

	Tons.	Tons.
<b>1. Quantity of pig-iron—</b>		
(a) Sold in India . . . . .	62,212	14,207
(b) Export from India . . . . .	269,431	72,039
	Rs.	Rs.
<b>2. Average price realised—</b>		
(a) In India . . . . .	55 13 9	45 12 0
(b) F.O.B. Port of Export . . . . .	38 8 2	42 7 1

### The Bengal Iron Company, Limited.

*Letter No. B/17782, dated 23rd July, 1928.*

We have to acknowledge receipt of your circular letter No. 672, dated 3rd instant, in regard to revenue duties on pig iron.

We have to inform you that the Indian Metallurgical Association is replying on our behalf.

### Indian Metallurgical Association, Calcutta.

#### A.—WRITTEN.

(1) *Letter No. I. M. A.-34, dated 7th August, 1928.*

I have the honour to state that your circular letter No. 672 of the 3rd July, 1928, addressed to the various pig iron producers in connection with the removal of the existing revenue duty on Pig Iron has been forwarded to the Committee of this Association for reply.

I am instructed to state that whilst the manufacturers of machinery in India may have a technical grievance against this revenue duty owing to the fact that machinery is imported free of duty while the duty on pig iron raises their costs, we consider that if a thorough enquiry was made into the matter it would be shewn that the saving per machine would be so small as to be entirely negligible, for instance, in the manufacture of Jute Mill Machinery a reduction of Rs. 7-8-0 per ton in the price of pig iron would we estimate be equivalent to not more than about  $\frac{1}{2}$  to  $\frac{1}{4}$  of 1 per cent. on the price of each machine.

Pig iron producers are naturally willing to make a concession in price when it is proved that by doing so they will get increased business which they would not otherwise get, and as a proof of this, my Committee cite the case of the manufacture of cast iron sleepers for which very substantial concessions have been made to encourage their use and manufacture in India.

My Committee wish to point out that as far as the ordinary foundry is concerned, no reduction in duty is called for. Internal competition alone fixes the profits at which the ordinary foundries work and a reduction in price equivalent to the duty would not help them to produce more than they are producing or to sell it at a better profit. They moreover view with great concern the most unusual nature of the proposal to remove a revenue duty on an article which is being manufactured in this country, particularly so as the duty on pig iron in question is considerably lower than the normal revenue duty of 15 per cent. Such a procedure would be contrary to the accepted principle of assisting Indian manufacturers and while admitting that the manufacture of pig iron in India has now reached an economic stage my Committee feel that as the Iron and Steel Industry in India has not by any means expanded up to the full possibilities of the natural resources of this country that the removal of this revenue duty might militate against its future expansion.

This being so, my Committee submits that there is no good reason for reducing the duty. The revenue duty on Pig Iron has helped to build up a basic industry in this country and it should not be discarded lightly at the instance of a very small section of consumers. With the exception of Great Britain there is no country in the world in which this basic industry is not assisted by an import duty and the tendency of recent years has been to increase these duties rather than to decrease them.

Further my Committee are strongly of the opinion that at the present time the removal of this revenue duty would do very definite harm to the iron and steel industry in this country, and they would ask the Board to remember that the protection on steel has been calculated after taking into account the profits on Pig Iron and for this reason alone they think that members of this Association can protest with justice at a proposal to remove the duty in order to benefit, to a very slight extent, a few small users.

(2) *Letter No. 94-T., dated the 7th September, 1928, from the Tariff Board, to the Indian Metallurgical Association, Calcutta.*

I am directed to acknowledge the receipt of your letter No. I. M. A.-34 of 7th August, 1928 and to request you to furnish the following figures for the information of the Board:—

I. Quantity of pig iron—

(a) sold in India,

(b) exported,

during each of the last three years.

II. Average price realised—

(a) in India,

(b) f.o.b. port of export,

during each of the last three years.

III. Average c.i.f. price of imported pig iron of corresponding quality—

(a) British,

(b) Continental,

during each of the last three years.

*N.B.*—The constituent figures of the c.i.f. price, i.e., f.o.b. price, freight, and insurance charges, should be given in detail.

I am also to request you to furnish the Board with the details of the arrangements under which the shares of various manufacturing companies are allotted,

(a) in India,

(b) for export,

and a list of the countries to which pig iron is exported showing the quantity exported annually to each during the last three years.

(3) *Letter No. I. M. A.-34, dated the 1st November, 1928, from the Indian Metallurgical Association, Calcutta, to the Tariff Board, Calcutta.*

*Re* PIG IRON—IMPORT DUTY.

I am directed to acknowledge receipt of your letter No. 94-T. of the 7th September, 1928, and to give the following information which has been supplied to this Association by the Bengal Iron Company, Limited, the Tata

Iron and Steel Company, Limited and the Indian Iron and Steel Company, Limited:—

(i) Quantity of pig iron—

(a) Sold in India—

	Tons.
1925-26 . . . . .	90,533
1926-27 . . . . .	140,646
1927-28 . . . . .	138,338

(b) Exported from India—

	Tons.
1925-26 . . . . .	336,766
1926-27 . . . . .	320,120
1927-28 . . . . .	397,004

(ii) Average price realized—

(a) In India—

	Rs. A. P.
1925-26 . . . . .	44 15 6
1926-27 . . . . .	48 1 10
1927-28 . . . . .	50 4 1

(b) F.o.b. port of export—

	Rs. A. P.
1925-26 . . . . .	39 6 4
1926-27 . . . . .	39 10 9
1927-28 . . . . .	39 6 1

(iii) With regard to the constituent figures of the average c.i.f. price of imported pig iron I regret that reliable information is not available, as the amount of pig iron imported into India during the years 1925, 1926 and 1927 is so small that it has been impossible to obtain information regarding freight, insurance, etc., from purchasers of imported pig iron in this country.

A reference has, however, been made to the annual statement of the Sea Borne Trade of British India and the following figures of pig iron imported from all sources, British and Continental, are given below:—

	Rs.
1924-25 . . . . . 3,425 tons	valued at 4,64,177
1925-26 . . . . . 2,895 ,,	,, 3,24,147
1926-27 . . . . . 1,627 ,,	,, 2,60,265

These figures give an approximate c.i.f. value as follows:—

	Rs.
1924-25 . . . . .	135 per ton
1925-26 . . . . .	111 ,,
1926-27 . . . . .	160 ,,

It is probable that these imported irons are special grades which are not made in this country and in order to arrive at a more correct indication of the c.i.f. value of imported pig iron, the average price of Cleveland No. 3 Foundry f.o.b. English port has been taken from the Indian Trade Journal.

for the years 1925, 1926 and 1927 and the c.i.f. value in rupees arrived at by estimating the various charges as shown below:—

Year.	Cost f.o.b.	Freight insur- ance.	Total.	Rupees at $\frac{1}{2}$ .	Port charges.	Import duty.	Total c.i.f.
	£ s.	£ s.	£ s.	Rs. A.	Rs. A.	Rs. A.	Rs. A.
1925 . . .	3 14	1 1	4 15	63 6	3 0	9 0	75 6
1926 . . .	4 3	1 1	5 4	69 4	3 0	7 8	79 12
1927 . . .	3 15	1 1	4 16	64 0	3 0	7 8	74 8

With reference to your request that the Tariff Board be furnished with details of the arrangements under which the various manufacturers are allotted their share in this business I am to state that this information has not been furnished to this Association but that the Companies concerned are quite agreeable to let the Board have details of the arrangement if such details are to be treated as strictly confidential and are not published.

I trust this gives you all the information you require.

## INDIAN METALLURGICAL ASSOCIATION, CALCUTTA.

B.—ORAL.

**Evidence of Messrs. S. K. SAWDAY and G. H. FAIRHURST recorded  
at Calcutta on Tuesday, the 5th March, 1929.**

### *Introductory.*

*President.*—The Indian Metallurgical Association exists simply for official purposes, does it not?

*Mr. Fairhurst.*—Yes. The members are not only the iron and steel people, but also people who produce chemicals, manganese and other minerals.

*President.*—Does it do any regular work; has it got any articles of association and so on?

*Mr. Fairhurst.*—We have.

*President.*—So far as iron and steel are concerned, you are the only two members and the Bengal Iron perhaps.

*Mr. Fairhurst.*—The Bengal Iron Company, Indian Iron and Steel Company, the Tata Iron and Steel Company, the Tinsplate Company and Messrs. Bird and Company are also members. These latter are interested in iron ore only at present.

*Dr. Matthai.*—Does it include engineering firms?

*Mr. Fairhurst.*—No.

*President.*—Who is the Chairman of this Association?

*Mr. Fairhurst.*—Mr. Sawday.

*President.*—Has it got an office?

*Mr. Fairhurst.*—Yes, a registered office. It has been formed to further the interests of the metallurgical people generally.

### *Duty on pig iron.*

*President.*—There is one very simple point that we are enquiring into and that is this. There is this duty of 10 per cent. on pig iron which is intended to be a revenue duty. No revenue is derived from it practically. Revenue duty may also act as a protective duty. There is no real objection to that provided protection is required. Is it your case that protection is required for the manufacture of pig iron.

*Mr. Fairhurst.*—Protection has been required for the manufacture of pig iron.

*President.*—It may have been so in the past, but we have a policy of discriminating protection, which means that the industry must be able to dispense with protection as soon as possible and that protection ought not to continue when it is no longer required; I have never understood that any manufacturer of pig iron claimed that protection is required. So far as the Tata Iron and Steel Company is concerned it has never claimed that the duty should be retained.

*Mr. Sawday.*—You took the duty into account in calculating our total profits.

*President.*—I think we have allowed Rs. 15 over the works costs on pig iron and so long as that is not disturbed, nothing happens.

*Mr. Fairhurst.*—They are not getting that now. We are not getting Rs. 15 a ton average profit.

*President.*—In your case we never went into it, because we didn't have your costs.

*Mr. Fairhurst.*—I say that none of us are getting Rs. 15 a ton profit.

*President.*—But we have not got any evidence: in their case we found that the costs were very much higher than they ought to be owing to their labour charges being heavier than yours.

*Mr. Sawday.*—Owing to other circumstances the costs are tending to go up rather than down, although we have taken into account what you suggested about labour.

*President.*—Mr. Fairhurst, you have written down your capital by half.

*Mr. Fairhurst.*—Yes.

*President.*—That was because, I take it, there was a drop in prices.

*Mr. Fairhurst.*—Not entirely so, but because it was obvious that the Company couldn't pay on the original capital.

*President.*—Partly also owing to the fact that the prices have dropped. It may be also because the replacement value has come down.

*Mr. Fairhurst.*—Yes.

*Dr. Matthai.*—From these figures the Metallurgical Association have given for 1927-28, taking the exports and Indian sales you get an average price of Rs. 38 a ton. If it is Rs. 38 and you deduct Rs. 15, the works cost on that basis would be Rs. 23. You are suggesting that yours is more than that. I understand the works cost is now Rs. 18 on certain blast furnaces.

*Mr. Fairhurst.*—That is not including overheads.

*President.*—I think we allowed you Rs. 15 over the works cost, Mr. Sawday.

*Mr. Sawday.*—Our works cost is above Rs. 23.

*Mr. Sawday.*—The profits of foundries in this country have nothing whatever to do with the cost of pig iron. Profit per cwt. is simply a matter of internal competition.

*President.*—That is another point altogether. Just now we have got this position that Government is more or less pledged to the removal of duty on raw materials unless that duty serves some purpose, that is to say, it brings in some revenue or the industry needs protection.

*Mr. Sawday.*—We don't deny that, but we say that removal is pointless.

*President.*—Do you suggest that this revenue duty is not at all operating?

*Mr. Sawday.*—Removing it may lower the price of pig by Rs. 4 to Rs. 5 in India.

*Mr. Mathias.*—Is it your case that if this duty is taken off, it won't have any real effect on the internal price?

*Mr. Sawday.*—No. I will give you three cases. Mr. Pandit came to my office and discussed this question. I told him if he could produce some instances in which by getting cheaper iron, cheaper castings would result in increased sales, or could agree that the price should be lowered. He first talked to me of ploughs. He said that the cost of ploughs would be about Rs. 20, and I pointed out to him that the saving on the amount of pig iron to be used on it would perhaps be only one anna. Then he talked about sugarcane mills. The weight of a sugarcane mill is 1 to 1½ cwt. If we made a reduction of Rs. 5 to them on 1½ cwt. that comes to about 6 annas. I may say that it is almost the universal practice in this country for sugarcane mills to be hired out by the makers and mills used to be hired out several years ago in one area at Rs. 75 a year, whereas now new foundries have been started and owing to the private quarrels between particular makers, they are now making more mills and cutting each other's throats with the result that the rent has come down from Rs. 75 to Rs. 40. What earthly difference will As. 4 in the cost of manufacturing a sugarcane mill make when competition can bring the hire down Rs. 35 a year?

*Mr. Mathias.*—My point is rather different: supposing this duty of 10 per cent. is taken off, will it actually mean that you will have to reduce your present price?

*Mr. Sawday.*—Yes, by about Rs. 4 or Rs. 5. I am talking of the bazaar demand which has been represented before you. For pig iron what is called our pool price is between Rs. 60 to Rs. 70. We have other contracts, e.g., the East Indian Railway and so on, which would not be affected at all.

*Mr. Mathias.*—I was referring more to your big purchasers to whom you sell 10,000 to 20,000 tons.

*Mr. Sawday.*—They will buy at the same price as now.

*Mr. Mathias.*—As regards the small people, do they import at all?

*Mr. Sawday.*—No. They would if they could save on it. The total bazaar demand for all India is likely to be under 40,000 tons a year.

*Mr. Mathias.*—Would small people import 300 or 400 tons at a time.

*Mr. Sawday.*—They would import if we didn't quote below the import price.

*Mr. Mathias.*—So what it comes to is this: as regards the main portion of your sales in India, no reduction would be necessary in order to effect your sales, but as regards your bazaar trade, a reduction of about Rs. 5 would be necessary.

*Mr. Sawday.*—We believe the effect will be that on 40,000 tons, we would lose about a lakh of rupees, the Indian Iron and Steel would lose about a half lakh of rupees and the Bengal Iron Company half a lakh of rupees.

*President.*—How it is that more will fall on you?

*Mr. Sawday.*—Because the bazaar takes the lower grades of iron, and we will have more of the lower grades to sell to the bazaar. As regards the foundries, the removal of duty won't have any effect on their profits and you will only take 2 lakhs of rupees away from us.

*Mr. Mathias.*—What about jute mill machinery?

*Mr. Sawday.*—That is absolutely negligible. The cost of pig iron in jute mill machinery is one per cent. of the whole cost.

*Mr. Fairhurst.*—I would like to say here that we have had representations from machinery manufacturers during the last year or so in which they asked us to reduce our price of pig iron. We said we would be very pleased to do so if they could prove to us that it would enable them to make more machinery and so enable us to sell more pig iron. On going into the matter it was proved to them that in the case of a jute loom which weighs about 10 cwt. with the duty taken off, they would save Rs. 3-12-0 on the whole machine costing Rs. 650; on a jute cop which costs Rs. 4,000, they would save Rs. 18-12-0 on the machine, so you will see that there is nothing in it. The value of the pig iron compared to the total cost of a machine of that kind is very very small.

*President.*—Can you give us the names of the companies and the figures?

*Mr. Fairhurst.*—The Angus Company and the Britannia Engineering Company. I will give you the figures.

*President.*—What happened? Did you make any reduction?

*Mr. Fairhurst.*—No. There was no occasion for it in our opinion.

*President.*—What are the total requirements per year?

*Mr. Fairhurst.*—The approximate amount of pig iron used by these machine manufacturers for machines is probably about 1,000 tons per annum.

*President.*—That would save them about Rs. 5,000.

*Mr. Sawday.*—They might, but if their cost of production was something less and somebody else's cost of production is something less, their profit will remain the same.

*Dr. Matthai.*—Were the prices in 1928-29 the same as in 1927-28?

*Mr. Sawday.*—Practically the same.

*Mr. Mathias.*—The home price of pig iron has gone up, has it not?

*Mr. Sawday.*—Yes.

*President.*—It is very difficult to make a comparison between foreign prices and yours, because very little is imported.

*Mr. Sawday.*—We fix our prices anything upto Rs. 5 below the foreign prices.

*Dr. Matthai.*—In calculating your import price, you take No. 3 pig iron.

*Mr. Sawday.*—Yes.

*President.*—These average prices that you have given here, are they the average prices realised in India?

*Mr. Sawday.*—All sales in India.

*Dr. Matthai.*—The export price that you give here is the price at the port.

*Mr. Fairhurst.*—You have to take Rs. 4-4-0 off in our case. These figures would apply to 1927. They are rather lower now.

*Dr. Matthai.*—Lower by how much?

*Mr. Fairhurst.*—Prices to Japan this year are Rs. 5 lower than 18 months ago. That is our principal market.

*President.*—Could you give us your average prices for this year, say, for the last 10 months?

*Mr. Sawday.*—Just under Rs. 37 f.o.r. so far as we are concerned.

*Mr. Fairhurst.*—Yes. Our price for shipments would work out at Rs. 36 or so f.o.b.

*President.*—It would be better if each individual company gave us their average prices instead of these prices taken together, for Indian ports as well as for exports.

*Mr. Fairhurst.*—Do you want them for the 11 months of this year?

*President.*—Yes.

*Mr. Fairhurst.*—I will give you that.

*President.*—11 months so far as this period is concerned and for the last three years you give the quantities also.

*Mr. Fairhurst.*—I will let you have the prices realized for exports and in India.

*Dr. Matthai.*—On an average you export three times the quantity you sell in India, don't you?

*Mr. Sawday.*—Yes, it is rather more now. Exports have gone up.

*President.*—Your present block value, Mr. Fairhurst, is about rupees 2 crores 25 lakhs? That is on a production of how much?

*Mr. Fairhurst.*—We are just now relining one large furnace and our production from this month will be 45,000 tons a month on the two furnaces.

*President.*—Your works costs are lower than those of the Tata Iron and Steel Company?

*Mr. Fairhurst.*—I have not seen their costs but I should say they are lower. A great deal depends on what their capital charges are per ton.

*President.*—I am talking of the works cost.

*Mr. Fairhurst.*—It may be lower.

*Dr. Matthai.*—Did you see this representation from the Bihar and Orissa Chamber of Commerce? They make the point that the price of pig iron at Patna is Rs. 78 per ton and the price in Calcutta is Rs. 67 so that the people who have their foundries in Patna consider that the price of Rs. 78 they pay at Patna is unfair to them compared to the price prevailing in Calcutta. The particular point that they raised was that although you got concession rates on the railways, the purchaser did not get the benefit of it?

*Mr. Sawday.*—We got the concession rates not for somebody else's benefit; it is only for our own benefit. The Tariff Board report on steel assures we will get the benefit of our freights.



*Dr. Matthai.*—Actually at present most of these foundries really use scrap.

*Mr. Sawday.*—Yes. One of their arguments is that if they could get pig iron at a lower price it would replace scrap. That means we would have to go on chasing the price of scrap down till scrap was exported.

*President.*—On this question of freight I want to ask you one thing. You have got a flat rate both for your finished products as well as for your raw materials for wagon loads.

*Mr. Sawday.*—We have some station to station rates but normally it is the mileage rate.

*Mr. Mathias.*—It is not a telescopic rate?

*Mr. Sawday.*—No.

*Mr. Mathias.*—Does that apply to you, Mr. Fairhurst?

*Mr. Fairhurst.*—We have no special rate for pig iron in India. Our special rates are confined to raw materials and pig iron for export.

*Dr. Matthai.*—What is the maund rate?

*Mr. Fairhurst.*—15 of a pie per maund per mile.

*Dr. Matthai.*—And in your case it is .1, Mr. Sawday?

*Mr. Sawday.*—1 of a pie over the Bengal Nagpur Railway and about .15 of a pie over the East Indian Railway.

*President.*—15 of a pie is the ordinary rate, is it not?

*Mr. Fairhurst.*—Yes.

*President.*—That .15 of a pie is special rate too because the minimum rate is .1 of a pie and for other classes it is .166. Pig iron would not come under minimum, first and second class.

*Mr. Sawday.*—We have lower freights.

*President.*—When you sell to the up-country customer I suppose you take whatever your rate may be, .15 from the port to his destination.

*Mr. Sawday.*—Yes.

*President.*—So that you save something first of all on the Bengal Nagpur Railway section and on the other section also you save something.

*Mr. Sawday.*—Yes, and sometimes lose something, e.g., at Bombay. If we go anywhere beyond Lahore we lose something. If we go to Karachi, for instance, we lose Rs. 30 a ton.

*Dr. Matthai.*—On what proportion of your Indian sales do you get the standard price?

*Mr. Sawday.*—On about 40 per cent.

*Dr. Matthai.*—That means generally the Calcutta area?

*Mr. Sawday.*—Bombay too, and everywhere for the bazaar. That is standard price at destination.

*President.*—In the statement I asked you to give will you give us also how much of your sales would be affected if the duty was removed.

*Mr. Sawday.*—36,000 to 40,000 tons would be affected for all of us.

*Mr. Fairhurst.*—Very little in our case. We can give you the figure. The reason for this is that Tatas have nearly all the bazaar business.

*President.*—We have allowed for an average of 60,000 tons a year for your pig iron. You have not reached that yet.

*Dr. Matthai.*—This Rs. 5 reduction that you allow on the import price is it supposed to represent the difference in quality between the two?

*Mr. Sawday.*—Our quality is better.

*President.*—I think, briefly put, your case is that that though there may be a theoretical reason for the removal of the duty, in practice no reduction is required because the industry may lose about Rs. 2 lakhs a year.

*Mr. Sawday.*—Yes, and the foundries would get nothing and the consumer would get a negligible advantage.

*Mr. Mathias.*—And the present price to the large consumers is already below the import price *plus* the duty and even to the bazaar it is Rs. 5 below import price *plus* the duty; is that your case?

*Mr. Sawday.*—Yes.

*President.*—Another point has been raised by the Bihar and Orissa Chamber of Commerce—we don't express any opinion whether there is anything in the contention—they say naturally in order to get the pig iron market for yourselves you tender for the castings at a very much lower price than the price of pig iron would justify.

*Mr. Fairhurst.*—We tender for castings exactly as we do in the case of pig iron, at a lower rate than they could be imported.

*President.*—The whole point is this that if you sell your pig iron at Rs. 65 a ton and tender for steel sleepers at Rs. 70 they are not able to follow, how you can manage to do it.

*Mr. Fairhurst.*—I don't think it would be possible for any outside foundry people to buy pig iron from any iron company and compete against them any more than it would be possible for any steel people to buy ingots from Tatas and compete against them in rails and finished steel.

*President.*—What is the position as regards your pig iron manufacture, *Mr. Fairhurst.* Have you any project in view? Are you going to depend solely on the manufacture of pig iron or do you intend to carry on your processes further?

*Mr. Fairhurst.*—I think it is a thing which we must always have before us that is the possibility of manufacturing steel.

*President.*—This protection to the iron and steel industry was given in the hope that some day India would produce more steel but not pig iron which it exports at unremunerative prices sometimes.

*Mr. Fairhurst.*—We are compelled to export now. If we were to confine ourselves to the sale of pig iron in India solely we could not make it at less than Rs. 40 per ton.

*President.*—The idea is that the steel industry must expand.

*Mr. Fairhurst.*—The present position of the steel industry is not one which would encourage the capitalist to put more money into it and that is what rules the whole thing.

*President.*—So that at present there is nothing in contemplation by you?

*Mr. Fairhurst.*—We have no definite plans yet but we have in our mind all the time that we will have to go in for steel, from the point of view of the country and ourselves too.

*President.*—America might still put on a higher protective duty and it might be a bad day for you if you go on producing pig iron?

*Mr. Fairhurst.*—We realize that.

**The Bihar and Orissa Chamber of Commerce, Patna.**

**A.—WRITTEN.**

*(1) Letter dated the 30th November, 1928.*

From a report in the papers we learn that the Board is making enquiries regarding the retention of the import duty on pig-iron.

I am desired to request you to furnish this Chamber with full information regarding the scope of the present enquiry. If any evidence, already tendered, has been printed and is available, I shall be obliged by your supplying same.

I am further directed to submit that this Chamber strongly urges the entire abolition of the import duty on pig-iron. The duty helps to keep up the present high prices, which are inimical to the best interest of the country.

I am also enclosing two copies of the circular, this Chamber is issuing, on the subject of the combine in pig-iron and loss to the public by its high price and unfair competition.

*(2) Letter dated the 30th November, 1928, from the Bihar and Orissa Chamber of Commerce, Patna.*

I am directed by the Committee of my Chamber to draw your attention to the maintenance of unfair prices by manufacturers in certain commodities. Enquiries shewed that there were combinations amongst manufacturers and merchants, for maintenance of prices at certain levels, in a number of commodities. These combinations may be necessary, in the interest of particular industries, but there are others who discriminate amongst consumers, and charge unfair rates to certain consumers, and are competing with them, as users of these commodities, and killing all competition in certain lines. It is a well-known fact, that the product of one industry is very often, the raw material of another.

The complaint at present is mainly in connection with the pig iron trade, in which the three manufacturers in India, have formed a combine to maintain high prices, in the Indian market, while selling it very much cheaper for export, and at the same time giving certain firms, pig iron at cheap prices and themselves manufacturing cast iron goods, and selling same at prices— at which any other manufacturer, buying pig iron at prevailing rates, cannot possibly manufacture.

This has already brought one firm to loss, and prevents others from starting in that line.

The Committee of my Chamber particularly feel the way in which the Tata Iron and Steel Company are participating in this combine. This Company is run with Indian Capital, is supported by large grants from Indian revenues, and gets preference in various other ways, and its actions tend to bring loss and ruin to Indian foundries, and retards the growth of iron industry in the country.

The Committee of my Chamber desires to bring this to your notice, and requests an expression of your views on this subject, and the desirability of moving the Government of India to institute an enquiry into the matter, with a view to pass necessary legislation for its prevention.

(3) Letter No. 107/P. O. 29, dated the 21st February, 1929, from the Bihar and Orissa Chamber of Commerce, Patna.

I am directed to submit the accompanying memorandum on the Pig Iron duty, the Pig Iron Trust and the proposed duty on iron castings.

I beg also to inform you that Mr. R. C. Pandit has been nominated to give oral evidence as desired.

I beg to enquire if the Government will pay the travelling expenses of our representative from Patna to Calcutta and back.

I shall send you more copies of the memorandum which is in Press.

Enclosure.

THE BIHAR AND ORISSA CHAMBER OF COMMERCE.

*Memorandum on the tariff duty on pig iron.*

Tariff duty on pig iron can either be justified as a revenue duty or a protective duty. As a revenue duty there is no case for the retention of this duty. The figures of imports and of revenue derived from this duty are conclusive on the points. The figures are as under:—

	Imports in tons.	Receipts.
		Ra.
1925 . . . . .	2,986	22,305
1926 . . . . .	2,674	20,055
1927 . . . . .	3,852	28,390

It is obvious that the yield of this duty is so negligible that its abolition cannot be a matter of concern to Indian exchequer. There is no prospect of India importing larger quantity of this commodity in the future. The cost of domestic production is so low that the Indian producers can more than hold their own in the Indian market. The yield of the duty is not only low at present, but is sure to remain low for years to come.

The pig iron duty can be continued only if a case can be made for granting protection to the industry. The conditions laid down by the Fiscal Commission have to be considered if the policy of protection is to be applied with discrimination. These conditions are not satisfied by this industry. The industry is already enjoying natural advantages, and can face world competition without the slightest difficulty. India has already built up an export trade in pig iron, and has no difficulty in maintaining her position in foreign or domestic markets. Indian production in 1926-27 was 957,000 tons and exports 309,000 tons. The home market is already in the hands of Indian producers and can be developed if the price of pig iron is reduced. The cost of production of this metal in India, as is admitted by the Tariff Board and the manufacturers, is the lowest in the world, and if the producers will only take a far-sighted view of the situation, the industry has a future which is full of promise and possibilities. The industry can easily stand on its own legs; and it is difficult to conceive of an industry whose claim to the grant of assistance at the expense of the general taxpayer can be considered more baseless than that of pig iron industry in India. The policy of discriminating protection, therefore, calls for an immediate repeal of pig iron duty in India.

The imposition of the duty has exercised and is exercising very harmful effects on Indian economic life. The duty has already given the country its first big Trust. They have an arrangement to maintain the price of pig iron far above the competitive level and exploit the market to their own advantage. They are selling it at about the landing price which is, of course, enhanced by the 10 per cent. duty on imports. Their selling price in Calcutta is Rs. 67 per ton, while their cost does not exceed Rs. 30 per ton. A very

strong case for the public regulation of the price of pig iron could be made even if the Government had not imposed the import duty. It is against public interest that a combine should be allowed to charge a monopoly price for an important commodity like pig iron and the least that the Government can do is to repeal at once the duty which is making it possible for the producers to charge such high prices for a commodity which is such an important raw material of industry.

The producers are in a position to give an unfair advantage to the allied firms in the production of iron castings. A case may be cited in support of this contention. In February 1928 the Railway Board gave a contract to Messrs. Martin and Company for the supply of cast iron sleepers at Rs. 84 per ton f.o.r. Kulti. This firm could quote this price on account of having supplies of pig iron at a price substantially lower than the market price. The cost of manufacture of iron sleepers is about Rs. 20 per ton, and it is impossible for an independent producer who has to pay Rs. 67 per ton for pig iron to manufacture sleepers at Rs. 84 per ton. Messrs. Martin and Company not only covered their cost at that price but realized a handsome profit of about Rs. 20 per ton on account of their being in the family group with the producers of pig iron. The danger of creating conditions which make it possible for some manufacturers to enjoy such differential advantages is too obvious to need any special emphasis.

The prices at which pig iron is being sold at different centres can only be explained on the ground that the producers are adding ordinary freight to the landing price in Calcutta in most cases, and are not passing on the concession rates, which they are getting from the railways, to the consumers. The prices are—

	Per ton.
	Rs.
At Works (Asansol) . . . . .	70
„ Calcutta (132 miles) . . . . .	67
„ Patna (208 miles) . . . . .	78
„ Benares (297 miles) . . . . .	81
„ Cawnpore (499 miles) . . . . .	82
„ Agra (657 miles) . . . . .	84
„ Delhi (770 miles) . . . . .	82

According to these rates the selling price of pig iron at Works may be taken at Rs. 65-12-0 (selling price at Calcutta less freight at concession rate). On this basis the selling price at Patna should be Rs. 67-11-0 (selling price at plus Re. 1-15-0 freight) while the Trust price is Rs. 78 per ton. Similarly at Cawnpore the price should be Rs. 70-7-0 and not Rs. 82 which the pig iron users are compelled to pay.

There is also nothing to control or stop them from charging a higher price for any place they like, and they practically keep down all who may become competitors with them or their group in the various articles they manufacture.

The high prices which the foundries have to pay have had a most depressing effect on their activities. It is admitted that they are using scrap iron for castings. This is due to the expensiveness of pig iron, and not any reason for which they are to blame. They are finding it very hard to compete on equal terms with the large firms. They have to struggle against odds, and so many of them have after carrying on a losing battle for years had to close down on account of their inability to produce at a profit in face of high prices, and other adverse circumstances. It is these small producers who stand in need of assistance and consideration and it is they who are handicapped by the pig iron duty.

The duty on pig iron was increased from 2½ per cent. to 10 per cent. in 1922 when the Government needed money to balance its budget. This increase was incidental to a general revision of the tariff duties and was not

considered on its own merits. Since then its contributions to the treasury have been of no consequence on account of negligible quantity of imports. As a revenue duty the duty has no future; and its retention on the ground of protection cannot be urged without sacrificing the interests of the community as a whole. The duty is exercising a baneful influence over the working of our economic life and has set into motion forces which ought to be immediately curbed, if public interest is to be effectively safeguarded.

In no country in the world are the producers of pig iron left free to charge a prohibitive price as they do in India. The remainder of the Metallurgical Association that the protection on steel has been calculated after taking into account the profits on pig iron is without much force. The Tata Iron and Steel Company who receive the protection on steel derive but a small amount of profit on account of this duty. It is the other Bengal Iron and the Indian Iron Companies, one of whom is a non-Indian Company, who are exploiting the country with the connivance of the Tata Company.

India is not an undeveloped country so far as the production of pig iron is concerned, it is undeveloped in the uses of pig iron. The policy of Pig Iron Trust has made it dear in the country and retarded its use, and the action of the Government is helping and continuing this unnatural state of affairs.

The case for the abolition of this duty is, in the opinion of this Chamber, unanswerable and it is hoped that the Tariff Board will recommend the adoption of this measure in the interests of the general public.

In the opinion of this Chamber protection of castings is justified but this Chamber would oppose any import duty on iron castings unless a free market for pig iron is established in India. The only effect of any duty on iron castings would be to concentrate the manufacture into a group allied and controlled by the Pig Iron Trust.

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(4) *Letter, dated 4th March, 1929, from the Bihar and Orissa Chamber of Commerce, Patna.*

#### RE PIG IRON DUTY ENQUIRY.

In connection with the evidence given by me before the Board on 2nd instant, the President was pleased to state that the average price of pig iron realised by the manufacturers was about Rs. 39 per ton. I beg to submit that this figure is misleading. The basis of this average calculation should be properly investigated.

It is well known, that the manufacturers sell at very low rates to favoured people; and at an excessive price to the trade in general; calculating an average under such conditions of sale is meaningless. Their own people have the advantage, and the public will always have the burden. It is probably also not known at what rate the pig iron used in the foundries of the Pig Iron Companies is charged for. Sales may be shown at low figures to these departments, and a large profit shown in other ways, e.g., on manufacture of pipes and sleepers, as in the case of the Bengal Iron Co.

I also enclose copies of the correspondence, the Trustees for Debenture Holders of the Kirtyanand Iron and Steel Works, had with the Pig Iron manufacturers. They asked for a supply of 3,500 tons for pig iron in the year, but the rates quoted were the same as to purchasers for one wagon load.

Messrs. Tata Iron Company refused to enter into any arrangement for a year's supply. In their own case they want and get a seven years contract for supply of rails, so that they may place and work economically; but in their turn they refuse to give similar treatment to their buyers. It is needless to point out that no economical large scale manufacture can be taken up, unless the supply of raw material is assured.

For the same quantity 3,500 tons, both the Bengal Iron and Indian Iron Companies, quoted the Kirtyanand Works Rs. 70 f.o.r. Works. It may be remembered that they were selling at Calcutta at Rs. 67 per ton.

To a request to revise their quotation, the Companies wanted it to be shown first that it will increase the consumption of pig iron in India. They were doubtful as to the possibility of any expansion of the cast iron industry in India and were not prepared to make any concession. This is contrary to the President's information that concessions are made whenever a large quantity is purchased.

I shall be obliged by your placing this letter before the President.

Enclosure No. 1.

*Copy of letter, dated 15th January, 1929, from Trustees for Debenture Holder, Messrs. Kirtyanand Iron and Steel Works, Patna, to Messrs. Tata Iron and Steel Co., Ltd., Calcutta.*

I shall be obliged by your letting us know the price at which you can supply us Foundry Grade Pig Iron Nos. 2 and 3 approximately 3,500 tons at Rupnarainpur or Dendwa Siding (Sitarampur), E. I. R., in one year with average deliveries from April next.

Enclosure No. 2.

*Copy of letter No. SB/308, dated 22nd January, 1929, from Messrs. Tata Iron and Steel Co., Ltd., Calcutta, to Messrs. Kirtyanand Iron and Steel Works, Patna.*

Reference your letter No. 426 of the 15th instant, we regret we do not enter into annual contracts for the sale of pig iron. You will have to please send in your enquiries as your requirements arise from time to time.

Enclosure No. 3.

*Copy of letter No. B/1695, dated 17th January, 1929, from the Bengal Iron Co., Ltd., Calcutta, to Messrs. Kirtyanand Iron and Steel Works, Patna.*

#### Pig Iron.

With reference to your letter No. 428, dated the 15th instant, asking us to quote for 3,500 tons of Foundry Grade Pig Iron Nos. 2 and 3, we have pleasure in offering our Sand Cast, Bengal Brand Pig Iron at the undernoted rates:—

No. 2 quality at Rs. 70 per ton.

No. 3 quality at Rs. 68 per ton.

Both F.O.R. Kulti.

Deliver—As required within 1 year.

This offer is open for acceptance within 14 days from date and our terms are cash with order.

Enclosure No. 4.

*Copy of letter, dated 28th January, 1929, from Trustees for Debenture Holders, Messrs. Kirtyanand Iron and Steel Works, Patna, to the Managing Agents, The Bengal Iron Co., Ltd., Calcutta.*

I have your favour of 17th instant, quoting Rs. 70 and Rs. 68 per ton for Nos. 2 and 3 quality pig iron F.O.R. your Works.

I would like to point out that this is being sold at Rs. 67 and Rs. 65 per ton f.o.r. Calcutta while I am being asked to pay a considerably higher price F.O.R. your Works.

I shall be obliged, if you can revise your quotation and quote us a figure, at which it would be possible to compete with other manufacturers in the line.

Enclosure No. 5.

*Copy of letter, dated 4th February, 1929, from Trustees for Debenture Holders, Messrs. Kirtyanand Iron and Steel Works, Patna, to the Managing Agents, Bengal Iron Co., Ltd., Calcutta.*

Your No. B-4496, dated 2nd instant.

I have already indicated in our first enquiry our probable requirements in the first year.

You may take it at about 100 tons a month for the first 6 months 300 tons a month for the next 6 months and thereafter at about 1,000 tons a month.

The class of castings we propose taking up are agricultural implements, railway requirements, pipes, for which there is a very large and expanding market.

I trust you be pleased to consider this matter favourably.

Enclosure No. 6.

*Copy of letter No. B/4939, dated 7th February, 1929, from the Bengal Iron Co., Ltd., Calcutta, to the Constituted Attorney, Messrs. Kirtyanand Iron and Steel Works, Patna.*

We have to acknowledge your letter No. 58/PI-28, dated 4th instant, and note that you propose taking up the manufacture of agricultural implements, railway requirements and pipes.

Existing foundries which cater for these classes of castings are already short of work and we doubt whether your proposals will in any way increase the consumption of pig iron in India.

Enclosure No. 7.

*Copy of letter No. S/68/549, dated 31st January, 1929, from the Indian Iron and Steel Co., Ltd., Calcutta, to Messrs. Kirtyanand Iron and Steel Works, Patna.*

Replying to your letter No. 913 of 30th instant, we note you propose to start a large scale manufacture of Cast Iron material.

It is necessary for you to advise us exactly what class of material you propose to manufacture and also to put forward your case shewing how you can manufacture this material successfully and with advantage to trade in this country generally.

Please therefore let us have full particulars of the casting you propose to make, the market selling prices and the import prices of such castings when imported from abroad.

Enclosure No. 8.

*Copy of letter, dated 4th February, 1929, from the Trustees for Debenture Holders, Messrs. Kirtyanand Iron and Steel Works, Patna, to the Managing Agents, The Indian Iron and Steel Co., Ltd., Calcutta.*

I am obliged for your favour No. 5/68-549, dated 31st January, 1929. I am glad you have been pleased to consider our suggestions favourably.



As manufacturers of pig iron and controlling large foundries, at the same time having large enquiring experiences, you are in a better position to know and advise, the seeking information from us. I can assure you your guidance and help would be appreciated. I may, however, place a few points for your consideration.

Take the prospects of manufacture of Cast Iron sleepers. You must be aware of the large demand for sleepers for the railways. The high prices and difficulties of getting wooden sleepers are compelling the Railways to use cast iron and pressed steel sleepers extensively, and even concrete sleepers were tried. The demand is large, certain, and expanding, and with cheaper pig iron sleepers could be sold cheaper and used in place of pressed steel.

Unfortunately the policy of the firms which control pig iron, had been to keep its manufacture in their own hands and control. They have succeeded in this but the result had been higher prices for C. I. sleepers and lesser consumption of pig iron in the country.

You will be able to find out that on the last occasions (January-February 1929) the Railway Board gave out contracts for this at the following rates:—

To Martin & Co., at Rs. 84 per ton F.O.R. Kulti.

Tatanagar Foundry, at Rs. 77 per ton F.O.R. Kulti.

Your quotation to us had been Rs. 70 per ton F.O.R. Works.

You can see from above that a policy of supplying cheap pig iron has developed its consumption, at the same time the buyer (in this case Government) has benefited, and useful employment has been found for the foundry.

The manufacture of pipes is on a similar footing. An artificially high price of pig iron prevents competition, and the high price of the finished material prevents consumption.

As you are aware there are large importations of iron castings, which can be entirely stopped if the supply of pig iron is made cheaper.

I trust I have been able to give you sufficient indications of country's requirements, and I am sure you don't hold that the country has reached the limit of consumption of cast iron materials.

Our consumption of pig iron would be starting with 100 tons a month and rising to about 1,000 tons a month.

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(5) Letter No. 177, dated the 12th March, 1929, from the Bihar and Orissa Chamber of Commerce, Patna.

#### Re Pig Iron Duty.

Mr. Peterson on behalf of the Tata Iron and Steel Co., Ltd., writes as follows to the Karachi Indian Merchants' Association:—

"Regarding the paragraphs in the pamphlet referring to the Steel Company's views on the proposed removal of the revenue duty in pig iron, as expressed in evidence before the Tariff Board, Mr. Pandit's statement is incorrect, Mr. Peterson told the Tariff Board that the Steel Company did not object and never had objected the removal of the duty. If it is maintained it will be maintained in the interest of the Bhadravati Iron Works which probably cannot live without it. It is a matter of indifference to this Company whether this duty is maintained or not. It is not required as a protective duty and, as no revenue is collected from it, there seems to be no justification for it. It was, however, pointed out to the Tariff Board that, if the revenue duty was removed, then the pig iron manufacturer would be placed in the position of having to pay a 10 per cent. revenue duty on everything he imports while there is no duty on the article which he sells. This seems a curious method of assisting Indian

Industry and it seems surprising that a body such as the Bihar and Orissa Chamber of Commerce should advocate it."

As the pamphlet has been supplied to the Board, I have to point out that the quotation there of Mr. Peterson's evidence has been taken from the daily papers. Mr. Peterson supported the duty, while in this letter on behalf of the Tata Iron and Steel Co., he does not object to its removal. His detailed evidence has not been published. It is also surprising that the Tata Co.'s employees coming on behalf of the Metallurgical Association support the duty.

I am directed to submit that hardly any material which is used in any appreciable scale in the manufacture of pig iron pays import duty, *e.g.*, iron ore, coal, coke, lime-stone, waste gas, refractory materials.

## BIHAR AND ORISSA CHAMBER OF COMMERCE.

B.—ORAL.

**Evidence of Mr. R. C. PANDIT, recorded at Calcutta on Saturday,  
the 2nd March 1929.**

*Introductory.*

*President.*—Mr. Pandit, are you appearing on behalf of the Bihar and Orissa Chamber of Commerce?

*Mr. Pandit.*—Yes.

*President.*—Are you an officer of the Chamber?

*Mr. Pandit.*—I am the Secretary.

*President.*—Who is the Chairman?

*Mr. Pandit.*—Rai Bahadur Bansidhar Dhandhanian.

*President.*—This is a new institution, is it not?

*Mr. Pandit.*—We are in the fourth year.

*President.*—Its headquarters are at Patna?

*Mr. Pandit.*—Yes.

*President.*—How many members has it got?

*Mr. Pandit.*—About 40.

*President.*—Is it purely an Indian Chamber?

*Mr. Pandit.*—Yes.

*Dr. Matthai.*—Are the coal interests represented?

*Mr. Pandit.*—We have one member who is also the President of Indian Mining Federation, Mr. Ojha, and there is also another member Mr. Thaker.

*Dr. Matthai.*—How many of the members are interested in the iron and steel industry?

*Mr. Pandit.*—Five.

*Dr. Matthai.*—In what way are they interested?

*Mr. Pandit.*—They own iron foundries.

*Mr. Mathias.*—What do they turn out in the foundries?

*Mr. Pandit.*—They turn out about 20 to 30 tons a month of sugarcane crushers, and miscellaneous castings mainly for machine repairs.

*President.*—Supposing the price of pig iron was reduced, for what purposes would it be used more than it is being used now?

*Mr. Pandit.*—Now they have to use scrap a great deal. The trouble is that they cannot now collect good quality scrap. The scrap is sold in India in lots and they have to take whatever they can get.

*President.*—At what price can they buy scrap?

*Mr. Pandit.*—They have been paying about Rs. 45 per ton. In the Jharia fields it is not available in very large quantities and they have to come down to Calcutta to buy the scrap.

*Mr. Mathias.*—What tonnage did you say they turned out in a year?

*Mr. Pandit.*—About 400 tons a year.\*

*President.*—What are you manufacturing in your foundry?

*Mr. Pandit.*—I was manufacturing steel castings.

*President.*—For what purposes would pig iron be used if it was cheapened?

\*N.B.—[This should be 'about 1,000 tons a year' R. C. P.—22nd March 1929.]

*Mr. Pandit.*—For all requirements of iron castings. The trouble with the Indian firms is that the Indian consumers want their materials to be cheap and to make it cheap we have to use scrap a lot.

*Mr. Mathias.*—How many tons of scrap do they use in a year?

*Mr. Pandit.*—I can let you know after enquiry.

*Mr. Mathias.*—Can you give us any idea of the cost of these sugarcane mills?

*Mr. Pandit.*—About Rs. 60 each.

*Mr. Mathias.*—Could you give us any idea as to the reduction in the cost of the sugarcane mills if the cost of pig iron was reduced by, say, Rs. 10 per ton?

*Mr. Pandit.*—About Rs. 2 to Rs. 3. We over there cannot adopt the manufacture of pipes for instance, which requires pig iron. Unless we use larger quantities of pig iron we cannot make good pipes.

*President.*—I am coming to that presently. That is one of the points you mention. What I want to know is, for what purpose would pig iron be ordinarily used?

*Mr. Pandit.*—It would be used to make pipes, agricultural implements, sugarcane crushers, ploughs and so on.

*President.*—Ploughs would be very heavy if made out of pig iron, wouldn't they?

*Mr. Pandit.*—Ploughshares can be made of pig iron; the cast iron is used in the frame.

*Mr. Mathias.*—But they cannot be used for heavy soils?

*Mr. Pandit.*—That is true.

*President.*—Most of the agricultural implements are made of steel?

*Mr. Pandit.*—Yes, but iron castings also form a good part.

*President.*—Which agricultural implements are made of castings?

*Mr. Mathias.*—Perhaps the handles are cast?

*Mr. Pandit.*—Yes. Then again chaff cutters, rice hullers, oil mills and so on are all made of cast iron.

*President.*—Chaff cutters are steel, aren't they?

*Mr. Pandit.*—The frame work and the wheels, etc., are made of cast iron. The knife only is made of fine steel and the rest are all cast iron.

*Dr. Matthai.*—Would it be cheaper to use pig iron at Rs. 60 a ton than scrap at Rs. 45?

*Mr. Pandit.*—If the quality is to be maintained, one would like to use pig iron.

*Dr. Matthai.*—Practically the problem would be this. Supposing the duty was removed and prices came down from Rs. 65 to Rs. 60 in consequence, would that induce your people to buy pig iron at Rs. 60 rather than scrap at Rs. 45?

*Mr. Pandit.*—They won't give up the use of scrap altogether but they will use pig iron to a larger extent.

*President.*—You make a certain statement against these people that they are giving certain firms pig iron at cheap prices?

*Mr. Pandit.*—Yes.

*President.*—And you make a grievance of it, but their answer is that they do it when they get a customer who buys large quantities.

*Mr. Pandit.*—I may tell you that latterly on behalf of the Kirtyanand Iron Works I made enquiries and the position was that the Tata Iron and Steel Company were not prepared to enter into any long term contracts. They wanted them to buy from month to month and the other pig iron producers simply went on asking cross questions.

*President.*—What orders did you wish to place?

*Mr. Pandit.*—300 tons a month and we offered that if the pig iron was given at a reasonably low rate.....

*President.*—What rate did you offer?

*Price lower in Calcutta than at works.*

*Mr. Pandit.*—We did not offer any: we wanted their rates and told them that the consumption at the Kirtyanand Iron Works would be likely to go up to 1,000 tons a month. The offer we got was Rs. 70 *ex-works*. They were selling at Rs. 65 a ton at Calcutta and they wanted to sell to the Kirtyanand Iron Works which is only three miles from their works, at Rs. 70 a ton!

*President.*—That is something below the price of imported pig iron.

*Mr. Pandit.*—My position is that they were selling in Calcutta at Rs. 65 a ton.

*President.*—They would sell it at Calcutta at a price at which it could be imported at Calcutta and then they would add the freight from Calcutta to your place.

*Mr. Pandit.*—But they are getting a concession from the Government and this concession is primarily meant to make things cheaper for the consumer and not for them to make additional profit.

*President.*—As a matter of fact they sell at a higher rate at Asansol than they do in Calcutta?

*Mr. Pandit.*—Yes. I don't see how that can be done. They will carry the pig iron 130 miles to Calcutta and then sell it cheaper and at their doors they want a higher price. Is it fair?

*President.*—The same thing happens in other commodities. Oil is one of the industries, for instance, in which the product is sold cheaper in Great Britain than it is sold in Burma, where it is produced.

*Mr. Pandit.*—But here they get a definite concession from Government. If they had stood on their own legs then it would have been a different matter.

*President.*—What concession are you referring to?

*Mr. Pandit.*—I am referring to the concession in freight.

*President.*—They don't get it from Government.

*Mr. Pandit.*—No, from the Railways.

*President.*—You can have the same concession if you took wagon loads from Calcutta.

*Mr. Pandit.*—You mean the same rate as the Tata Iron and Steel Company gets?

*President.*—Yes. As far as I know there is no special freight rate given to Tatas except that the freight on iron and steel has been lowered. But anybody who takes wagon loads over the same distance would get the same rate. That is what I understood to be the case.

*Mr. Pandit.*—I don't know. I will have to see to it, but then they won't sell at their works. First of all they want to know where we want the pig iron and then they would quote f.o.r. destination and pocket this concession themselves.

*President.*—They take the price which corresponds to the price of taking pig iron from the nearest port.

*Mr. Pandit.*—I don't think that is exactly the case. Their price for example at Delhi and Cawnpore are the same although one is 424 and the other 770 miles.

*President.*—Because there is competition at Delhi from the other parts whereas there is no competition at Cawnpore.

*Mr. Pandit.*—If that rate,  $\frac{1}{4}$  th of a pie per maund per mile, is calculated it ought to be much cheaper. That is the concession they get.

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*President.*—Your whole complaint as far as we can see is this, they sell to some people at a lower price. Do you mean to say that they sell in Calcutta at a lower price than at factories? If so, their answer is that they charge in Calcutta the import price and at Asansol the import price, plus the cost of taking it to Asansol. That is the idea.

*Mr. Pandit.*—That is certainly the idea but it is unfair.

*Dr. Matthai.*—That is orthodox business!

*Mr. Pandit.*—That is rather sharp business one would call it!

*President.*—Would you not try to get the best price that you can get for your own goods?

*Mr. Pandit.*—Certainly, but they are misusing this concession in freight.

*President.*—I don't think anything turns on the question of freight at all. Another complaint is that they themselves manufacture cast iron goods and sell them at prices at which it is impossible for an independent manufacturer to produce. There also why should they not make use of their own raw materials?

*Mr. Pandit.*—What I say is, when people get concessions from Government, e.g., the Tata Iron and Steel Company and the other pig iron producers, in the matter of railway freight, why should they make invidious distinction?

*President.*—What invidious distinction are you referring to?

*Mr. Pandit.*—Distinction in the prices.

*President.*—What prices? You have not been able to show what distinction they make.

*Mr. Pandit.*—They sell to certain people at very cheap rates.

*President.*—They say if you buy large quantities they will give you the same reduction.

*Mr. Pandit.*—They don't.

*President.*—But you have not made any offer to them.

*Mr. Pandit.*—I did make the offer on behalf of the Kirtyanand Iron Works and their reply was that if we were prepared to show that the consumption of pig iron would increase in the country then they would be prepared to consider it.

*Mr. Mathias.*—Did you make attempt to show that?

*Mr. Pandit.*—It is very difficult to prove if you don't believe it. You can see that large number of pipes are imported. There is no reason why these should not be manufactured in the country if pig iron is cheap enough.

*President.*—The Bengal Iron and Steel Company manufacture as many pipes as they can.

*Mr. Pandit.*—They don't want anybody to get into that trade.

*President.*—Naturally, because they produce the raw materials; why should they allow anybody to get into that business?

*Mr. Pandit.*—The Tata Iron and Steel Company being one of the parties in the combine won't sell us pig iron at a cheap price. Our grievance is not so much against these other people but against Tatas who are getting every help from Government; while the country is paying money, for the development of the industry, they are helping these other people to make money.

*President.*—Can there be two prices in the country, the Tata Iron and Steel Company selling Rs. 20 below the others?

*Mr. Pandit.*—It can't be. Let Tatas get a reasonable profit.

*President.*—What would happen would be that some middleman will buy Tatas products.

*Mr. Pandit.*—They can sell it to the actual consumer. It would not be so very difficult to ascertain who the actual consumers are. The foundries are known, the factories are known and their output can always be ascertained.

*Dr. Matthai.*—If they sold to a railway company, they would sell direct, would they not?

*Mr. Pandit.*—Yes.

*Dr. Matthai.*—If your suggestion were accepted that Tatas should get out of this combine and supposing the railways were asking for tenders for pig iron and if Tatas quoted a price lower than these people, then possibly the general price may go down and there is no question of a middleman in it.

*Mr. Pandit.*—That is so.

*President.*—Your suggestion is that the Tata Iron and Steel Company which receives so much national assistance, should bring down the prices of pig iron in the country.

*Mr. Pandit.*—Yes.

*Mr. Mathias.*—If they don't, the import duty must be abolished; is that your case?

*Mr. Pandit.*—The import duty must be abolished in any case.

#### *Removal of the duty.*

*President.*—Do you think that the abolition of the import duty would reduce the price of pig iron in the country?

*Mr. Pandit.*—Yes.

*President.*—By how much you think it would?

*Mr. Pandit.*—It is difficult to say. It will be reduced by somewhere between Rs. 4 and Rs. 7.

*President.*—And that you think will help the other industries?

*Mr. Pandit.*—Yes, it will be one of the things which will help. It will act indirectly on the combine in this way that it will make their profits so much less.

*Mr. Mathias.*—Is there much pig iron used in the bazar by the *lohars*?

*Mr. Pandit.*—Yes. A large number of things are made out of it, e.g., cooking pots and so on.

*Mr. Mathias.*—Do you think a reduction of Rs. 4 to Rs. 7 would affect the demand for those articles?

*Mr. Pandit.*—Certainly. India after all is a very poor country; even one pice or two pice may matter a lot. If you see farmers going a mile or more to buy their things one pice cheaper, you will be able to appreciate that.

*Mr. Mathias.*—So you think that if there was a slight reduction in the price of pig iron, the bazar demand for it would be increased?

*Mr. Pandit.*—Yes.

*President.*—You say in your letter dated 30th November, 1928 that this has already brought one firm to loss. Which firm are you referring to?

*Mr. Pandit.*—Messrs. \_\_\_\_\_ and Company, Lahore and Calcutta.

*President.*—What were they doing?

*Mr. Pandit.*—They were manufacturing railway sleepers. They got a contract for cast iron sleepers, but in the second time they were stranded, because they could not get any pig iron.

*President.*—These other people must have supplied these sleepers.

*Mr. Pandit.*—Yes. Messrs. Martin and Company got the contract as a result of this unfair combine.

*President.*—First of all, so far as these two people are concerned, the Bengal Iron Company and the Indian Iron and Steel Company, there is no obligation on their part to sell pig iron cheaper than at which you can import.

*Mr. Pandit.*—The complaint is not so much against them as against the Tata Iron and Steel Company who being in the combine are helping them.

*President.*—The Tata Iron and Steel Company have not got much pig iron to sell, have they?

*Mr. Pandit.*—That is the worst of it. They don't make much profit themselves, but help these people to make the profit. That is worse still. If they had made some money, there might have been some relief; they would have made so much and therefore they would not have been in need of help from public revenues to the extent to which they are now getting.

*President.*—Can you suggest any way in which the price could be reduced? What do you expect the Government to do? Supposing this duty was removed, it would make a difference of only Rs. 4 to Rs. 7 per ton.

*Mr. Pandit.*—Tatas should be made to come out of this combine and sell independently. They were doing that before they joined this combine.

*President.*—On what ground do you suggest that Government should put it to Tatas?

*Mr. Pandit.*—In the interests of the country.

*President.*—It would mean this that Tatas also will have to forego a considerable amount of profit.

*Mr. Pandit.*—It is not very considerable so far as I am aware.

*President.*—What do you suggest should be the price of pig iron?

*Mr. Pandit.*—It should be between Rs. 45 to Rs. 50 *ex-works*, and that should give them a good margin.

*Dr. Matthai.*—They are not getting more than Rs. 50 *ex-works*. The average price they are realising at the works is Rs. 50, so that they are not selling at any higher price than you suggest. Their average price *ex-works* for exports would be about Rs. 45 and in India Rs. 50.

*Mr. Pandit.*—We can't understand that from the freight calculations.

*Dr. Matthai.*—It would be perfectly legitimate for you to suggest that they should sell in the Indian market at a price of Rs. 45 to Rs. 50.

*Mr. Pandit.*—We are prepared to pay them a few rupees more, but the present price is not reasonable.

*Dr. Matthai.*—Assuming that their fair selling price is Rs. 35 and the average price is Rs. 40, Rs. 5 more would give them 10 per cent. profit.

*Mr. Pandit.*—Yes.

*Dr. Matthai.*—Assuming Government removed this duty of 10 per cent. and brought the price down from Rs. 65 to Rs. 60, is there any further step that you expect Government to take?

*Mr. Pandit.*—We would ask Government to request the Tata Iron and Steel Company to come out of this combine.

*Dr. Matthai.*—The Tata Iron and Steel industry represent a protected industry and it is worth while that their profits should not be brought down, because it simply means that it prolongs the period of protection.

*Mr. Pandit.*—But the amount of profit which they make by this higher price of pig iron is very small. The bulk of their output is either utilised in steel making or is exported. They sell, from what I can understand, about 15,000 tons or so in the country.

*Dr. Matthai.*—As a matter of fact when they are able to consume all the pig iron that they produce in the steel works, the problem would automatically solve itself.

*Mr. Pandit.*—Yes.

*Dr. Matthai.*—Supposing we asked the Tata Iron and Steel Company to get out of this combine and to sell at competitive rates, if after a period of two years they have no surplus pig iron to sell, then the position would be more or less what it is now.

*Mr. Pandit.*—If they had no surplus pig iron to sell after two years, they could put up another blast furnace. That would not be difficult for them. It is better that the Tata Iron and Steel Company, for whom the country is making so much sacrifice, produces more pig iron and sells it



cheap than to allow others to make more money. They have the organisation; they have the raw materials.

*Dr. Matthai.*—They have not got the capital.

*Mr. Pandit.*—If they reach a stage when they use up all their pig iron, it would not be difficult for them to raise additional capital for putting up a blast furnace.

*Dr. Matthai.*—Was the main business of the Kirtyanand Iron Works the manufacture of steel castings?

*Mr. Pandit.*—Yes. They did a small amount of iron castings also.

*Dr. Matthai.*—Their main trouble was that they couldn't get any orders.

*President.*—After all you must go by the average price that these people realise on all their pig iron. The position is this: in 1927-28 the average price realised at the works for pig iron sold in India was Rs. 50 a ton.

*Mr. Pandit.*—Is that taking all the works combined?

*President.*—Yes. You must know that they sell considerable quantities in Bombay, Karachi and other places in competition against imported pig iron.

*Mr. Pandit.*—Why should they go so far?

*President.*—They must sell their output. The average price they realised f.o.b. for their export was Rs. 39. That is at the port, but you must make a reduction of about Rs. 1 for freight and handling charges and so on. That makes the price Rs. 35 per ton. The proportion of the Indian market is 1:3, so it gives them an average price of Rs. 38 a ton at the works for all their pig iron, both export and import. If you reduce their price, say, even by Rs. 4 a ton, they would lose on the Indian market about Rs. 4 or Rs. 5 lakhs. That would again reduce the average price by Rs. 2. That would give them Rs. 36 on these figures. Therefore, though in some parts the price of pig iron may be higher than it ought to be, still on an average, they don't realise an excessive price.

*Mr. Pandit.*—Why rob Peter to pay Paul, why charge an extra price to the people who ought to get it cheaper and thus not enable the iron casting industry to flourish?

*President.*—What can they do? They have got a certain amount which they must produce and they must find a market for their output and their average price comes to Rs. 38, on these figures. If they still lower the price in this area—Calcutta is the area where their price is the highest—the average price will still come down by a couple of rupees.

*Mr. Pandit.*—Would not that still leave them a profit?

*Dr. Matthai.*—There is another difficulty and that is that about 400,000 tons of pig iron are being exported. The variation in price is a thing over which they have no control and there must be a little reserve against that.

*President.*—That is the position.

*Mr. Pandit.*—Yes, but that means that you want to cut down the iron casting industry. The position would be that if you continue maintaining the present state of affairs, with pig iron selling at such high rates, the iron casting industry would never develop in the Calcutta area.

*President.*—You suggest that the price of Rs. 38 is an excessive price, but supposing Rs. 38, having regard to the works cost, is not excessive what are we to do? I am just asking for your views.

*Mr. Pandit.*—In the interest of the pig iron producers, they should reduce the price. If there is a larger sale of pig iron in the country, they will get a better price than they are getting for export, and they will recoup it in that way. If pig iron is cheap, the iron casting industry would develop and there would be a bigger market in the country. But they would not allow the iron casting industry a chance. Their prices are so high that it cannot develop and then they say "we cannot reduce the price, because there is no demand for iron castings". I may tell you that the imports of cast iron pipes and fittings in the year 1926-27

were 9,000 tons, in 1927-28 they rose to 15,000 tons. If these could be made in the country.....

*President.*—Probably you will find that they were importing these into Burma and Madras and other places where the freight disadvantage would come in, e.g., Karachi. Can we take merely the price in this area and say they must bring down the prices rather than on an average

*Mr. Pandit.*—Why take away the natural advantages of this area?

*President.*—What can you expect these people to do? Take the Indian Iron and Steel Company, for instance. They have already written down half their share capital. Once they declared a dividend of 6½ per cent. and once a dividend of 15 per cent. That is all they have done so far and they have lost about Rs. 16 lakhs. Unless you are able to show that their profits are excessive, what could you expect them to do?

*Mr. Pandit.*—I am not in a position to say anything about the Indian Iron and Steel Company. You will probably be able to get that information from them, but profits and dividends are somewhat different matters. We have to see the cost of making pig iron and the selling price.

*President.*—If these figures are accepted, if Rs. 38 is the price that they get f.o.r. works and supposing that we are satisfied that it is not an excessive price, in that case what do you want us to do?

*Mr. Pandit.*—If you are satisfied, then we can't say anything except pressing our claims to cheapen the price of pig iron.

*President.*—You yourself have suggested that Rs. 40 or so would leave them a fair profit. If that is a fair price, then Rs. 38 is fairer still from your point of view.

*Mr. Pandit.*—Yes, but we have to see that one part of the country is not ostracised on account of another. We are thinking of the natural advantage this area possesses for the manufacture of iron castings.

*Dr. Matthai.*—There are different prices in different areas and it is only on that distribution of market that they can get the best possible aggregate realisation.

*Mr. Mathias.*—I suppose the iron castings industry adopts the same principle, that is to say they sell their castings at the best price they can get at their door?

*Mr. Pandit.*—These foundries are everywhere and everybody is competing, whilst here there is this combine which is dictating the price. That makes a great difference.

*President.*—You have not given us any instance in which they have shown particular partiality to certain manufacturers.

*Mr. Pandit.*—The Tatanagar foundry, we understand, is getting pig iron at very low rates. It belongs to Messrs. Narsingh and Company. They bought the factory belonging to the Enamelled Iron Wares Limited. They are going in for railway sleeper manufacture on a large scale. Last year they got a contract and they got it because the Tata Iron and Steel Company gave them pig iron at a very low rate.

*President.*—What was the rate?

*Mr. Pandit.*—I don't know the exact rate, but I understand it was very low.

*President.*—All I can say is that we will look into this matter and see what can be done. The first thing we must do is that we must not make any recommendation which would injure an established industry.

*Mr. Pandit.*—We don't want it to be injured, but we want fair play and the right to live.

*President.*—It is only after we are satisfied that the removal of the duty would not interfere with the development of the iron and steel industry in India, that we should be in a position to make a recommendation.

*Mr. Pandit.*—All of them were definitely of opinion before that this doesn't matter to them at all.

*President.*—Quite true, but the position may have changed.

*Mr. Pandit.*—They have changed for the better. As regards manufacturing cost, they are producing larger quantities of pig iron; generally costs have come down and naturally their own cost of production ought to come down. If they were of opinion that pig iron duty did not matter at that time, I don't think it should matter to them now except that having that combine they see that they can make some more money out of it, and as Mr. Peterson said before you at Bombay—as reported in the papers—it helps them to get a better price. That, I submit, should not be the only criterion.

*President.*—We don't accept that as the criterion at all. Mr. Peterson may say what he likes, but we are not bound by that necessarily. May I put it to you this way? If we are satisfied on an examination of the costs of the materials, that the average price that they get at the works is not excessive, but leaves them only a reasonable margin of profit, then the revenue duty may remain, but if we are satisfied that they can afford to give up the revenue duty and still make a reasonable profit, then the revenue duty goes.

*Mr. Pandit.*—I submit revenue duty is not a revenue duty, it is then a protective duty. You cannot have protective duty if you can't satisfy the conditions laid down by the Fiscal Commission. Those conditions will have to be satisfied.

*President.*—We have considered that. Those conditions have been satisfied by the Iron and Steel Industry. I am trying to point that the freight advantage you are referring to.....

*Mr. Pandit.*—I think that the special rate was given only to the Tata Iron and Steel Company. I referred the matter to the Agent of the East Indian Railway, but I have not yet received any reply.

*President.*—The representatives of the East Indian Railway Company are coming to us on Monday and we shall ask them about this. But so far as my recollection goes, the question arose in connection with the sale of steel in the up country market. The Continental importers complained that they were not getting the same rates as the Tata Iron and Steel Company and it was pointed out to them that they would get the same rates which were in force from the ports provided they took wagon loans and went over the same distance.

*Mr. Pandit.*—Our information has been that Tata Iron and Steel Company had undue preference.

*President.*—Anyhow I shall again ask the railway people who are coming to us next week about this.

*Dr. Matthai.*—I suppose if instead of concession rates, ordinary rates were charged, the price would be higher.

*Mr. Pandit.*—Yes, but we will all be on the same footing. We don't mind paying a higher price, but we want to be all on the same footing. If one man gets the raw materials, we are using at Rs. 80 a ton and we get it at Rs. 100 a ton, we can't stand.

### Sikdar Iron Works, Calcutta.

*Letter dated the 29th January 1929.*

We understand that the Board is now enquiring into the present position of the Pig Iron Industry in India for the removal of the existing revenue duties. In this connection we beg to submit our views with the hope that the Board will take the same into consideration before coming to any decision on the point.

Enclosure.

#### *The Import duty on Pig Iron and the Pig Iron Trust.*

(BY MR. K. C. DE.)

The importance of Pig Iron for the development of the industries of a country cannot be exaggerated. It is the principal raw material for the manufacture of iron and steel which are again the basic industries for almost every other industry. It can be said without fear of contradiction, that the industrial development of a country depends mainly on its ability to produce pig iron economically. There is an economic doctrine to the effect that "other things being equal, the country that produce the cheapest pig iron has the advantage over its competitors throughout the whole range of heavy steel products." So far as this essential material is concerned India is best situated and has immense advantages over other countries throughout the world. A bountiful Providence has given her the best possible resources in raw materials and she is already producing pig iron more economically than any other country in the world.

This advantage, unfortunately, is being exploited by a few firms who taking advantage of this unique position and on the import duty on this material have entered into a Trust and are maintaining a high price on the basis of the rates of the foreign manufacturers *plus* 10 per cent. import duty and are exporting to foreign countries at a much lower rate. By the maintenance of this high price and by making this invidious distinction in the export price and the price for internal consumption and some members of this Trust being themselves large manufacturers of finished cast iron they have ruined and dislocated several other industries of the country engaged in cast iron relying on foreign pig iron before these firms came into existence.

#### *The manufacturers of Pig Iron.*

At present the Tata Iron and Steel Company at Jamshedpore, The Bengal Iron Company at Kulti, and the Indian Iron & Steel Company at Asansole are the principal manufacturers of pig iron. There is another firm in Mysore who manufacture pig iron, with charcoal but their output is not sufficient to affect any industry to any appreciable extent.

Of these firms the Tata Iron and Steel Company is an Indian firm enjoying protection from Government by the imposition of tariff duties over all classes of steel manufactured by them as also by large bounties from the public revenue.

The Bengal Iron Company is a foreign firm with foreign capital and this firm with Indian Iron and Steel Company are under the managing Agency of Martin & Co. Thus these two firms of Martin & Co. and the Tata Iron and Steel Company are controlling the rates and manufacture of this most important raw material necessary for almost all industries in the country.

*The cost of manufacture of Pig Iron and the price charged for consumers in India.*

The Tariff Board in their report of 1925, page 18 stated, "The total cost of pig iron is not more than Rs. 30 per ton while the Tata Iron and Steel Company have sold pig iron on ten years' supply contract for as low as Rs. 23 which is supposed to have left them a reasonable profit." A representative of the Tata Iron and Steel Company in his evidence before the same Board stated (*vide* Volume I, page 17 of the Tariff Board's report of 1924) "We can produce pig iron from raw materials at prices, which enable us to export freely in competition with England and America." They hoped to reduce cost still further by employing Indian labour.

The Trust however maintains rates for the industries of this country for Pig Iron No. 2, foundry grade at Rs. 65 per ton f.o.r. Calcutta while exporting the same stuff to foreign countries at Rs. 45 per ton.

The other two firms in this Trust under the managing Agency of Martin & Co. together with another firm started by the same managing Agents under the names of Eastern Light Castings and a subsidiary firm of Tata Iron & Steel Company are engaged in manufacturing cast iron in an extensive scale and as only these firms have the essential raw material at their command at cheap rates they are monopolising the whole of the cast iron industry and the old industries of the country who used to rely previously on imported pig iron have either to close down or to divert their activities to the lines in which these firms are not interested.

This is happening at a time when India is producing the cheapest pig iron in the world.

The difficulties of other firms as a result of this combination and consequent unhealthy competition can well be described by the following instance. "In 1926, The North Western Railway Company called for tenders for the supply of cast iron sleepers. The Bengal Iron Company quoted Rs. 68 for the finished sleepers while the rate of pig iron alone of this Trust of which this Company was a member at this time was Rs. 65 per ton." This happens every year and the sleeper supply worth several lakhs of rupees annually is a monopoly of the Trust.

*The justification of the Trust and the Government's duty.*

The question, in fairness, arises whether this Trust can be permitted to thus monopolise such a tremendous amount of raw materials preventing further enterprises and developments in these lines. It is time to devise some means whereby the vast natural resources of the country can be equitably distributed among the children of the soil who must be considered co-partners in such natural gifts.

Government is also unwittingly helping this most unjust combination by imposing a duty of 10 per cent. on the import of Pig Iron. The duty was 1 per cent. from 1900-16. It was raised to 2½ per cent. from 1916-22 and 10 per cent. from that time and this increase was due to raising the revenue in that year.

Import duties are justified only on two grounds. Firstly to raise the revenue to secondly for the protection of industries. As there is hardly any import of pig iron at present Government stands to lose no revenue and the first ground is not applicable. Protection to industries again is justified only on three conditions as laid down by the Fiscal Commission in paragraph 97 of their report, *vis.*: (1) The industry must have natural advantages, (2) The industry cannot develop without protection, (3) The industry must eventually face world competition. The Tariff Board in paragraph 14, page 24 of their report stated "India is already producing pig iron more economically than any other country in the world and a considerable export trade has come into existence with Japan and the west coast of America."

Besides all the members of the Trust manufacturing Pig Iron have previously stated that they require no protection. Thus the second condition cannot also apply. The result of the existence of this has been that the manufacturers of pig iron by entering into this most unfair combination has been exploiting the consumers in India and are crushing other struggling rival industries and it is up to the Government to abolish this duty without any delay.

*The effect of this Trust on other enterprises.*

Even the undue advantage enjoyed by this Trust will pale into insignificance if the amount of annual import of cast iron in different shapes of machineries, pipes, fittings, etc., be taken into consideration. The total cost of this import will be several lakhs of rupees. At least a portion of this imported stuff could be manufactured by other enterprises in this country if the Trust would not have maintained this inflated price on the most essential raw material. This would have contributed to the general growth of industries in the country and solved the unemployment problem to a certain extent. Thus this Trust is affecting not only the other existing enterprises to prosper but is also discouraging further enterprise in the line and are affecting all the consumers in India. It is stated some members of this Trust have applied to the Tariff Board for the maintenance of this most iniquitous duty on Pig Iron. Nothing could certainly be more ridiculous than this selfish request.

*Tata Iron and Steel Company and their part in the Trust.*

At this stage it may not be out of place to mention that the association of the Tata Iron and Steel Company with this Trust is not justified in any way. This firm was the first and is still the only firm in India to take advantage of the vast resources in raw materials for the manufacture of steel. In spite of their best situation in respect to raw materials and unique position among the world competitors they could not withstand foreign competition after the war and had to seek protection of Government for their very existence. The Legislative Assembly on the 16th February 1923 adopted a resolution recommending, among other things, to accept in principle the proposition that the fiscal policy of Government may legitimately be directed towards fostering the development of Industries in India. The Government of India in pursuance to this resolution appointed a Tariff Board by their Resolution No. 3478, dated the 10th July 1928 and as recommended by the Fiscal Commission in paragraph 107 of their report asked the Board to examine first the question of extending protection to the manufacturers of steel in India.

The Board, after enquiries, recommended the protection of steel industries (in which the Tata Iron and Steel Company alone are interested) by imposing duties on those steel which are manufactured by this firm. This imposition of protective duties on an important basic industry has naturally affected the consumers and other industries. Even this protection was not sufficient and subsequently large bounties had to be sanctioned from public revenue to keep the firm alive. Thus the very existence of this firm depends on the huge sacrifice of the people but they are paying this debt of gratitude by entering into an unholy alliance with foreign capital and strangling the other struggling enterprises in this line. It may be mentioned in passing that this firm not being engaged in the manufacture of cast iron is not benefited beyond having a higher price on the pig iron consumed in India again in this respect the amount of their output consumed in this country is insignificant but in spite of this they are instrumental to this huge foreign exploitation and no language could be strong enough to condemn this action of this Indian Concern.

There are several instances of firms investing huge capital having come to grief for their failure to secure pig iron at a reasonable price. The case of Kirtyananda Iron and Steel Works and Sikdar Iron Works may be mentioned in this respect.

Kiryananda Iron and Steel Works invested a capital of about 15 lakhs and were the second private enterprise in the country to manufacture cast steel. Owing to failure to secure imported pig at a reasonable rate to compete with foreign import of cast steel and Indian pig iron not being suitable for the purpose they had to give up steel casting. They could not again secure Indian pig iron at a cheaper rate from the Trust to be able to compete in the open market with the producers of cast iron who are members of the Trust and had to close down altogether.

Sikdar Iron Works was established in 1879 long before the inception of any of these firms. They were the first enterprise in this country to manufacture rain water down pipes and spiral stair cases, etc., and had established a reputation for light casting. They contributed to a large extent for the stoppage of import of these materials from the foreign countries relying for their principal raw material on the foreign imports and carried on a flourishing business. Since this Trust has come into existence and the pig iron is at the disposal of this Trust who are also competitors in the market for finished products it has become extremely difficult for this one of the oldest enterprises in the country to carry on and to meet both ends. This is the story all over the country.

That India is backward in industrial development is an undisputed fact. The policy of the Government is also to encourage the growth of Indian industries and private enterprises by all legitimate means. There could surely be no justification for this Trust to maintain such unfair inflated price on this most important raw material and there is least justification for this protected and bounty-fed firm to enter into this Trust and it is high time for the Government to abolish the present import duty on pig iron and to ask the Tata Iron and Steel Company to dissociate from this combination and to supply pig iron to the Indian consumers at a reasonable price thereby enabling other enterprises to compete into open market for the finished goods with the manufacturers of pig iron. The rate of pig iron for supply to other enterprises in India may be settled by the Government and if this Company still persists in this unequal treatment the protection they are getting may be withheld. This is most essential for the encouragement of private enterprise and the growth of Indian industries and with that the general prosperity of the country. This will also partly solve the unemployment question.

### **Bengal National Chamber of Commerce.**

*Letter No. N. S. B. R.-1, dated the 6th March, 1929.*

I am instructed by the Committee of the Bengal National Chamber of Commerce to draw the attention of the Tariff Board to the incidence of the existing duty levied on pig-iron imported into India. The duty was raised to 10 per cent. in the year 1922, and is still standing at the original rate although it has been found to be fruitful of bad economy and fraught with glaring inequities. An import duty can either be levied on the ground of its serving as a buffer against foreign competition to foster indigenous industries, or on the extensible ground of yielding at least a substantial, if not a large, revenue. In the light of present circumstances the prevailing duty of 10 per cent. is found to be quite superfluous when viewed with reference to the requirements of indigenous industry; and the revenue which it yields appears to be so insignificant that no pretention can be made to justify the duty on that account. The duty has therefore, created an anomaly which ought to be removed as soon as possible.

The Committee of the Chamber are aware of the fact that iron-smelting is one of those key industries which ought to be protected at any cost even

by according them a distinctly preferential treatment. The manufacture of pig iron in India, however, does not stand in need of such protection for in fact it has now become possible to manufacture pig iron in India even at a lower cost than either in America or in England. The committee would refer to the evidence of the Tata Iron and Steel Co., before the Tariff Board in 1924, in which the former observed that they could produce pig iron from indigenous raw materials at prices which enabled them to export freely in competition with America or England. The low cost of production was not a privilege of the Tata Company, and was rather an advantage enjoyed in common by other producers as well. It is interesting to note that the retention of the duty was never urged by the manufacturers to protect them against foreign competition and it is a point to be noted that there is no fiscal policy of national importance involved in the imposition and retention of the duty.

Again, the revenue yielded by the duty amounts to such a paltry sum that the latter could be suffered to endure only so long as it proved absolutely innocuous. One who is not directly interested in the subject can hardly regard the duty to be a non-protective measure and at the same time persuade himself to believe that it yields a revenue of less than 40,000 rupees.

Yet it is not for the correction of a simple anomaly alone that the removal of the duty is urged. The duty has been found to be responsible for graver consequences than a mere faulty application of the principles of tariff. It has induced the Indian producers to make price discriminations by quoting differential prices for the internal and export markets. Sheltered by the import duty these producers have found it possible to charge for the internal consumption of pig iron a price which is much higher than what is quoted for the export market where the price-level depends on the cheapest of available sources of world-supply. The Indian producers have thus to export pig iron at Rs. 45 per ton, while the same is sold for Rs. 65 per ton for use within the country. The difference between the two quotations depends so far as the Indian market is concerned, partly upon the effect of the import duty and partly upon the cost of production of foreign manufactures inclusive of the cost of transport from the producing country to India. When account is taken of the fact that the average cost of production in India is Rs. 30 per ton it becomes apparent that a large part of the high profits obtained by the Indian producers is a sort of unearned income having no relation to their productive efficiency and being referable directly to a superfluous bounty of the Government for which no claim has been put forward by the producers themselves.

The Committee of the Chamber would not have been so keen about the removal of the duty if it had been a subject affecting the producers of pig iron alone. The protection of the duty has lately led the producers away from the spirit of fairplay. Being a few in number and organised into a closely knit group the producers are now virtually holding the position of a cartel behind the wall of protective tariff. Not only do they charge a high price for the internal market and thus impose a loss on the consuming public consisting mostly of agriculturists who use extensively such manufactures of pig-iron as utensils and domestic implements, but having, in some cases, foundries of their own the producers also make local price discriminations which enable certain favoured firms manufacturing cast-iron materials to undersell their rivals.

In these circumstances the Committee of the Chamber consider it most desirable that the import duty should be abolished altogether. The internal price of pig-iron at such event would be immediately lowered by Rs. 7 per ton. There is another ground on which the removal of the Tariff can be urged with still greater force. The Tata Iron and Steel Co. which is the strongest member of the combine is being subsidised with the Indian tax-payers' money and it is highly objectionable that the Company should indulge in such manœuvres for price control as hits directly the interests of a majority of the tax-payers.



**Messrs. Kirloskar Brothers, Limited.***Letter, dated the 15th April, 1929.***Re REMOVAL OF REVENUE DUTY ON PIG IRON.**

We learn that the Board is at present considering the question of removing the duty on pig iron and we also learn that the manufacturers of Pig Iron have opposed such a proposal.

As manufacturers of Agricultural Implements and other machinery such as pumps, etc., we use from one thousand to 1,500 tons of pig iron per year and with a view to successfully meet foreign competition it is our desire that we get our raw material as cheaply as possible.

We understand that the cost of pig iron at present is somewhere between Rs. 25 to Rs. 30 per ton and it is our opinion that the removal of duty will not in any way affect the profits of the Pig Iron manufacturers.

We would certainly not have objected to the retention of the duty had not these manufacturers themselves entered into competition with other Foundry Owners.

What we now find is this. Owing to the combination of pig iron manufacturers, they have been successfully keeping up the selling prices of pig iron and are thus putting up an obstacle in the manufacture of other articles. We would not have even objected to this combination, had not these manufacturers themselves entered into business of turning out castings and selling them at cheaper prices than what other foundry owners can do owing to the monopoly price of pig iron. To cite an instance on the subject we find that Messrs. Burn and Co. have of late begun to manufacture small Meston ploughs which were being sold somewhere at Rs. 6 each till the last year, but with a view to find out a use for their pig iron, they have now reduced their prices by about 40 per cent. and now the same plough is being offered by them at Rs. 3-8 each f.o.r. Howrah. This is really a price which is below our manufacturing cost and if these manufacturers were to go on taking up other lines, we believe all Foundry Owners will have to close down their Works. With a view to avoid this catastrophe, we think that not only the duty on pig iron be removed, but it should also be seen whether the enormous profiteering that is being done in pig iron is not put a stop to by breaking up the cartel. We believe that the least that the Tariff Board can do is to remove the duty on pig iron and help the Foundry Owners from the competition of Pig Iron Manufacturers. In this respect, we find that the case of foundry owners is placed before the Board very nicely by the Bihar and Orissa Chamber of Commerce and with a view to avoid repetition of the same arguments over again, we strongly support in every detail what they say in their Memorandum and strongly urge the removal of duty. We have therefore to request you to please place the letter before the Board for their consideration.

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*Letter No. 326, dated the 19th/20th November, 1928, from the Tariff Board, to all the railways.*

I am directed to say that the Tariff Board is now considering the applications of certain manufacturers of machinery for the removal of the existing revenue duties upon raw materials required in the manufacture of machinery. One of these raw materials is pig iron. The Board understand that the railways also require pig iron for the manufacture of castings for the railway wagons. I am therefore to request you to furnish the Board with the following information as soon as possible:—

1. (1) The quantity of pig iron purchased by the Railway during the last five years, with the sources of the supplies.

- (2) Whether the Railway had any occasion to make any complaint about the quality of the pig iron which was purchased from the Indian manufacturers during the same period.
2. The Board will also be glad to have information regarding the quantities, specifications and prices of all tool, alloy and special steel that the Railway make use of.

**The Madras and Southern Mahratta Railway Company, Limited.**

*Letter dated the 10th December 1928.*

Your No. 826 of 19th November 1928.

With reference to your letter quoted above, I have the honour to send herewith the following statements:—

- (1) Statement "A" showing the quantity of Pig Iron purchased by the Madras and Southern Mahratta Railway Co., Ltd., during the last five years, i.e., from September 1923 to July 1928.
- (2) Statement "B" in two sheets showing the quantities, specifications and prices of the Tool Alloy and special Steel that the Madras and Southern Mahratta Railway makes use of. The quantities are for one year from December 1927 to November 1928.

Enclosure.

**STATEMENT "A".**

*Statement showing quantity of Pig Iron purchased by the Madras and Southern Mahratta Railway Company, Ltd., during the last five years.*

Year.	Quantity purchased.	Name of the materials.	Source of supply.	Remarks
	T. C. Q. LB.			
September to August 1923-24	550 0 0 0	Iron Pig, Bengal Special.	The Bengal Iron Co., Ltd., Calcutta.	
1924-25	800 0 0 0	Iron Pig, Mysore No. 2 Grade.	The Mysore Iron Works.	Annual contract.
September to July 1925-1928.	1,690 0 0 0	Ditto . . .	Do.	Do.
	10 0 0 0	Indian Iron and Steel Co.'s (Burn & Co., Calcutta), Machine Cast Pig Iron, No 2 Grade.	Messrs. Burn & Co., Calcutta	
	10 0 0 0	No. 3 Grade . . .	Do.	
	5 0 0 0	Iron Pig Mysore Scotch Grade.	The Mysore Iron Works.	

## STATEMENT "A"—contd.

Year.	Quantity purchased.	Name of the materials.	Source of supply.	Remarks.
	T. C. Q. LB.			
August to July 1926-1927.	1,330 0 0 0	Iron Pig, Mysore, No. 2 Grade.	The Mysore Iron Works.	Annual contract.
	151 8 0 0	Iron Pig, Mysore Scotch Grade.	Do.	
August to July 1927-28.	1,560 0 0 0	Iron Pig, "Burn" Machine cast to Specification A (for ordinary class of castings).	Messrs. Burn & Co., Agents, Indian Iron & Steel Co., Ltd., Calcutta.	Annual contract.
	168 13 3 14	Iron Pig, "Burn" Machine cast to Specification B (for soft iron for mixing).	Do.	Do
	11 0 0 0	Iron Pig, cold blast for Cylinders (Staffordshire Iron).	Home Supply (Messrs. John Walsh & Co., Ltd., Birmingham).	
Total	8,316 1 3 14			

## STATEMENT "B".

*Quantities, Specifications and Prices of the Tool Alloy and Special Steel that the Madras and Southern Mahratta Railway makes use of.*

Class and Reference number.	Description.	Quantity purchased in the country for past 1 year, December 1927 to November 1928.	Price per cwt.	Quantity purchased for 1 year past from Home, December 1927 to November 1928.	Price per cwt.
	STEEL TOOL CAST WATER HARDENED.				
	Octagonal.	T. C. Q. LB.	Rs. A. P.	T. C. Q. LB.	Rs. A. P.
B. G. Gb. 4/523	1/2 inch. Carbon 0.70 to .80 per cent.	0 13 3 0	25 0 0	0 16 0 0	32 1 0
M. G. 522					
M. G. 523	1 inch. Carbon 1.10 to 1.80 per cent.	Nil	...	0 5 3 24	32 1 0

STATEMENT "B"—*contd.*

Class and Reference number.	Description.	Quantity purchased in the country for past 1 year, December 1927 to November 1928	Price per cwt.	Quantity purchased for 1 year past from Home, December 1927 to November 1928	Price per cwt.
	STEEL TOOL CAST WATER HARDENED— <i>contd.</i>				
	<i>Octagonal—contd.</i>	T. C. Q. LB.	Rs. A. P.	T. C. Q. LB.	Rs. A. P.
B. G. Gb. 4/521	1½ inch. Carbon 1.10 to 1.20 per cent.	0 1 2 0	26 8 0	0 8 0 0	32 1 0
	<i>Round.</i>				
B. G. 526	½ inch. Carbon	<i>Nil</i>	...	0 0 3 0	32 1 0
M. G. 529	0.9 to 1.00 per cent.				
M. G. 530	½ inch. Carbon	0 0 1 0	35 0 0	<i>Nil</i>	...
	0.7 to 0.8 per cent.				
M. G. 531	½ inch. Carbon	<i>Nil</i>	...	1 0 0 0	32 1 0
	0.70 to 0.80 per cent.				
B. G. 528	1½ inch. Carbon	0 3 0 0	38 0 0	0 5 0 0	32 1 0
	0.9 to 0.90 per cent.				
B. G. 529	1½ inch. Carbon	0 12 0 0	37 8 0	1 10 0 0	32 1 0
M. G. 532	1.10 to 1.20 per cent.				
B. G. 530	1½ inch. Carbon	0 8 0 0	30 0 0	0 5 0 0	34 6 0
	0.90 to 1.00 per cent.				
R. G. 531	2 inch Carbon	0 9 0 0	35 0 0	0 18 1 0	32 1 0
M. G. 533	0.90 to 1.00 per cent.				
B. G. 532	2½ inch. Carbon	0 16 3 0	40 0 0	2 0 0 0	32 1 0
M. G. 534	0.80 to 0.90 per cent.				
B. G. 533	5 inch. Carbon	3 10 0 0	26 0 0	4 0 0 0	32 1 0
	0.80 to 0.90 per cent.				
	<i>Square</i>				
B. G. 537	1 inch. Carbon	0 0 3 0	24 8 0	<i>Nil</i>	...
	1.00 to 1.10 per cent				

## STATEMENT "B"—contd.

Class and Reference number.	Description.	Quantity purchased in the country for past 1 year, December 1927 to November 1928.	Price per cwt.	Quantity purchased for 1 year past from Home, December 1927 to November 1928.	Price per cwt.
	<b>STEEL TOOL CAST WATERS HARDENED—<i>conoid.</i></b>				
	<i>Square—contd.</i>	T. C. Q. LB.	Rs. A. P.	T. C. Q. LB.	Rs. A. P.
B. G. Gb. 4/538	1½ inch. Carbon 1.00 to 1.10 per cent.	Nil	...	0 2 0 0	32 1 0
B. G. 539	1½ inch. Carbon 0.90 to 1.00 per cent.	0 4 0 0	24 8 0	Nil	...
B. G. 540	1½ inch. Carbon 0.80 to 0.90 per cent.	0 0 3 0	36 0 0	Nil	...
	<i>Flat.</i>				
M. G. 531/A	5 inch × 1½ inch. Carbon 0.65 per cent.	Nil	...	0 5 2 0	32 1 0
		6 19 8 0	...	11 16 2 0	...
	<b>STEEL TOOL HIGH SPEED AIR HARDENING.</b>				
	<i>Flat.</i>				
B. G. 542/A	1 inch × ½ inch. Grade No. 2—18 per cent. Tungsten.	0 3 3 0	192 8 0	0 2 0 0	205 4 0
M. G. 541/B					
B. G. 545	3 inch × 1½ inch. Grade No. 1—22 per cent. Tungsten.	0 5 0 0	231 0 0	0 2 0 0	224 0 0
M. G. 543					
M. G. 541	½ inch × ½ inch. Grade No. 2—18 per cent. Tungsten.	0 0 3 0	192 8 0	Nil	...
M. G. 541/A	2 inch × ½ inch. Grade No. 2—18 per cent. Tungsten.	0 0 1 0	192 8 0	Nil	...
	<i>Round.</i>				
M. G. 548	½ inch. Grade No. 2—18 per cent. Tungsten.	0 0 2 0	196 0 0	Nil	...

## STATEMENT "B"—contd.

Class and Reference number.	Description.	Quantity purchased in the country for past 1 year, December 1927 to November 1928.	Price per cwt.	Quantity purchased for 1 year past from Home, December 1927 to November 1928.	Price per cwt.
	STEEL TOOL HIGH SPEED AIR HARDENING— contd.				
	Round—contd.	T. C. Q. LB.	Rs. A. P.	T. C. Q. LB.	Rs. A. P.
B. G. Gb. 4/549/A	$\frac{3}{8}$ inch. Grade No. 2—18 per cent. Tungsten.	0 0 1 0	203 0 0	0 0 1 0	204 12 0
B. G. 551	$\frac{7}{8}$ inch. Grade No. 2—18 per cent. Tungsten.	Nil	...	0 2 0 0	205 4 0
B. G. 552/A M. G. 551	1 inch. Grade No. 2—18 per cent. Tungsten.	0 0 3 0	203 0 0	0 2 2 0	205 4 0
	STEEL TOOL "PNUSNAP" (WATER HARDENING FOR SNAPS).				
	Round.				
B. G. 555	2 $\frac{1}{16}$ inch .	Nil	...	0 1 2 0	46 1
	STEEL TOOL HIGH SPEED AIR HARDENING.				
	Square.				
B. G. 559/A M. G. 559	$\frac{1}{2}$ inch. Grade No. 2—18 per cent. Tungsten.	0 2 2 0	182 0 0	0 4 0 0	205 4 0
B. G. 561 M. G. 561	1 inch. Grade No. 2—18 per cent. Tungsten.	Nil	...	0 13 0 0	205 4 0
B. G. 562 M. G. 562	1 $\frac{1}{4}$ inch. Grade No. 2—18 per cent. Tungsten.	0 1 2 0	182 0 0	0 7 2 0	205 4 0
B. G. 563	1 $\frac{1}{2}$ inch. Grade No. 1—22 per cent. Tungsten.	0 1 2 0	224 0 0	0 0 2 0	224 0 0
B. G. 563/A	1 $\frac{1}{2}$ inch. Grade No. 2—18 per cent. Tungsten.	0 3 0 0	152 0 0	0 2 0 0	205 4 0
		0 19 3 0	...	1 17 1 0	...

## STATEMENT "B"—concl'd.

Class and Reference number.	Description.	Quantity purchased in the country for past 1 year, December 1927 to November 1928.	Price per cwt.	Quantity purchased for 1 year past from Home, December 1927 to November 1928.	Price per cwt.
B. G. 247	STEEL FOR STAMPING DIES.	T. C. Q. LB.	Rs. A. P.	T. C. Q. LB.	Rs. A. P.
	6 feet x 1 foot x 5 inch.	2 Nos.	30 0 0	Nil	...
	Approximate	1 4 0 0	...	...	...
	STEEL, MILD.				
	Round.				
B. G. 459/A	3½ inch to B. E. S. A. Specification Class A.	28 0 0 0	8 4 0	Nil	...
B. G. 451/B	4 inch to B. E. S. A. Specification Class A.	7 4 0 0	9 12 0	3 0 0 0	7 10 0
B. G. 459/C	4½ inch to B. E. S. A. Specification Class A.	1 15 0 0	7 11 6	Nil	...
B. G. 459/D	5 inch to B. E. S. A. Specification Class A.	3 9 0 0	9 8 0	1 16 0 0	7 8 6
	Special Steel	41 12 0 0	...	4 16 0 0	...

Bombay, Baroda and Central India Railway Company, Limited.

## A.—WRITTEN.

(1) Letter dated the 12th December 1928.

With reference to your letter No. 825, dated 19th ultimo, I enclose three statements giving the information required by you.

The Deputy Controller of Stores of this Railway will appear before the Board on the 17th instant to give evidence in connection with the above.

## Enclosure.

Serial No.	Merchant's Name and Address.	Description of Pig Iron.	Total contracted quantity during 1924-25.	Total contracted quantity during 1925-26.	Total contracted quantity during 1926-27.	Total contracted quantity during 1927-28.	Total contracted quantity during 1928-29.	REMARKS.
1	Mysore Iron Works, Bhadrawati, Agents: Messrs. Chhaganlal & Co., Carnac Bunder, Bombay.	Pig Iron No. I . . .	Tons. 225	Tons. ...	Tons. ...	Tons. ...	Tons. ...	
2	Do. do.	Pig Iron Scotch grade "Charcoal."	...	...	400	600*	400*	*Supply complained.
3	Do. do.	Pig Iron No. 3	450	...	...	...	...	
4	Do. do.	Do.	...	...	...	...	100	
5	Do. do.	(Charcoal Pig Iron) Pig Iron hard mottled.	...	...	...	...	100*	
6	Bengal Iron Co., Ltd., Agents: Martin & Co.	Pig Iron No. I . . .	...	250	...	...	...	
7	Do. do.	Do. No. III	450	...	...	...	...	
8	Indian Iron and Steel Co., Agents: Burn & Co.	Pig Iron No. I Burn Machine Cast.	...	...	...	350	...	
9	Do. do.	Pig Iron No. I Burn Sard Cast.	...	...	...	...	150	
10	Do. do.	Pig Iron No. III Burn Machine Cast.	...	...	500	...	400	
11	Tata Iron and Steel Co., Bruce Street, Bombay.	Pig Iron No. 3 Tata's make.	...	300	400	300	200	
12	Home Board . . .	Iron Pig Dilleshall Cold Blast No. 4 for Cylinder Casting.	100	163	40	45	...	
13	Do. do.	Iron Pig West Coast Hematite for steel making.	1,000	400	700	300	400	To specification — Carbon 3.0 to 4.0% Silicon 3.5 to 4.0% Sulphur not to exceed .03% Phosphorous .03% Manganese 0.5 to 0.8%
14	Do. do.	Iron Pig Cartsherric No. 3 for Engine Work.	...	...	...	200	...	
15	Do. do.	Hematite Ore for mixing.	...	...	...	...	1	



(2) Letter dated the 21st December, 1928, from the Bombay, Baroda and Central India Railway.

Subject: PIG IRON PURCHASED BY THE B., B. & C. I. RAILWAY.

With reference to correspondence ending with my letter No. S. 195/T. 219/23 of 12th December 1928, and in compliance with the request made by the President to Mr. Henman, Acting Deputy Controller of Stores, who gave evidence in connection with the above matter, I beg to enclose a further statement giving details of the costs of pig iron and particulars of places where the same was used.

Enclosure.

Remarks.	Rate per ton for last supplies.	Place of delivery.	Where it was used.	Landing cost on English Pig Iron.
	Rs.			
* Supply complained . . .	53	F. O. R. Bhadravati.	Loco. and Carr. Shops, Parel.	...
	50	F. O. R. Bhadravati.	Loco. Shops, Ajmer	...
* Supply complained . . .	52	F. O. R. Bhadravati.	Loco. and Carr. Shops, Parel.	...
	54	F. O. R. Hirapur Works.	Carr. and Wagon Shops, Ajmer.	...
	54	F. O. R. Burnpore.	Carr. and Wagon Shops, Ajmer.	...
	50	F. O. R. Burnpore.	Loco. and Carr. Shops, Parel.	...
	50	F. O. R. Tata-nagar.	Loco Shops, Ajmer.	...
			Loco. Shops, Ajmer.	Rs. A. P. 118 6 3 Ton
To Specification ---			Carr. and Wagon Shops, Ajmer.	76 4 0 Ton.
	Per cent.		Loco. Shops, Ajmer.	81 15 10 Ton August 1927.
Carbon . . .	3.0 to 4.0			Rs. A. P. 75 5 0 Ton March 1928.
Silicon . . .	3.5 to 4.0			
Sulphur not to exceed . . .	0.3			
Phosphorous . . .	0.3			
Manganese . . .	0.5 to 0.8			

**BOMBAY, BARODA AND CENTRAL INDIA RAILWAY  
COMPANY, LIMITED.**

B.—ORAL.

**Evidence of Messrs. O. GOMES, Deputy Traffic Superintendent,  
Rates, and H. D. HENMAN, Acting Deputy Controller of Stores,  
recorded at Bombay on Monday, the 17th December, 1928.**

*Introductory.*

*President.*—Mr. Gomes, what position do you hold in this Railway?

*Mr. Gomes.*—D. T. S. Rates.

*President.*—Mr. Henman, what position do you hold?

*Mr. Henman.*—Acting Deputy Controller of Stores.

*President.*—Are you in charge of the policy of the Bombay, Baroda and Central India Railway Company or are you merely familiar with the amount of rates?

*Mr. Gomes.*—That is all.

*President.*—You have simply come here to tell us what the freights are.

*Mr. Gomes.*—Yes.

*President.*—Have you discussed this question with the Agent?

*Mr. Gomes.*—No.

*President.*—Did you get the subsequent letter that we wrote to the Agent enclosing him a copy of the letter which we addressed to the Great Indian Peninsula Railway?

*Mr. Gomes.*—Yes, copies of proceedings; the questionnaire and the answers put in by the firms.

*President.*—My Secretary sent you another letter enclosing a copy of the letter dated the 30th November, 1928, which he wrote to the Agent, Great Indian Peninsula Railway, have you got that?

*Mr. Gomes.*—Yes.

*President.*—Did the Agent see that letter?

*Mr. Gomes.*—I am not sure whether he personally saw it.

*President.*—Is it not his business to see letters which he receives from responsible authorities?

*Mr. Gomes.*—I don't know what the practice is in the Agent's office. He has a Secretary.

*President.*—Who is the Agent?

*Mr. Gomes.*—Sir Ernest Jackson.

*President.*—Who is his Secretary?

*Mr. Gomes.*—Mr. Medley.

*President.*—Did you get this letter from the Agent's office with any office note?

*Mr. Gomes.*—A copy of the letter has been sent down to the Traffic Manager for information.

*President.*—What action was taken on this letter?

*Mr. Gomes.*—I couldn't tell you.

*President.*—Do you understand the import of that letter especially the last paragraph of that in which we make it perfectly clear what we wish to discuss?

*Mr. Gomes.*—Yes.

*President.*—This is not a point which we can discuss with you.

*Mr. Gomes.*—I can give you any information you want.

*President.*—It is not a question of information: it is a question of policy.

*Mr. Gomes.*—I will go and speak about it to the Agent's office and see what they have to say.

*President.*—The Agent knows or ought to know from our letter that this Board was concerned in this matter with larger questions of policy. We could get information of the kind you can supply from any subordinate officer of the railway. Here we expressly say in our letter what we are going to discuss:—

"The subject which the Board wishes to discuss with you generally is the possibility of assisting the Indian industry by reducing the freight on raw materials and on finished products and also in case it is decided to recommend such assistance how far and in what form it would be possible to safeguard the interests of the railways."

You have been sent here by the Agent and I have no doubt that you will give us the information that is in your possession. But this is not merely a question of information and I do not see what practical purpose would be served by my going on with your evidence this morning. Of course I cannot compel the Agent to appear before the Tariff Board if he does not wish to, but this Board can always make its observations in its report.

*Mr. Gomes.*—I think the impression in the Agent's office when they first received your letter . . . . .

*President.*—Did not the Agent see the correspondence?

*Mr. Gomes.*—He did see the first letter which you wrote.

*President.*—Did he not see the second letter?

*Mr. Gomes.*—I am not sure about it, but I know he has seen the first letter, because his remarks are there. In sending the letter down to the Traffic Manager, this is what he says:—"It will be necessary to give oral evidence before the Tariff Board. Will the General Traffic Manager kindly let the undersigned know whom he proposes to nominate".

*President.*—Does not the Agent know that when questions of policy relating to his administration are under discussion, it would be more appropriate if he himself appeared.

*Mr. Gomes.*—I could not answer that.

*President.*—I have no doubt you will convey to him what I have said just now. We shall have to make our observations about this when we come to write our report for we have not received assistance of the kind we expected from this Railway Administration. This is a very important point. It is not merely a question of knowing how much freight is payable from one place to another. We have received no communication either to say what views the railway had on the points raised in the correspondence in order that we may know what they are going to say.

*Mr. Gomes.*—We are only asked to give oral evidence.

*President.*—Yes, but through some person who is responsible for the policy of the Company. As I told you, I don't think it will serve any practical purpose at all merely to discuss the amount of rates with you if you don't direct the policy of the Company. In these circumstances I don't propose to take your evidence. Of course your evidence would have been useful if it had been put to the Board through more responsible officers of the Company. You might have advised them as an expert on any particular point and then the more responsible officers of the Company could have made a statement. But as it is I don't see what purpose it would serve if I am to examine you on these points. You can tell the Agent so.

(Mr. Gomes then withdrew.)

*President.*—Mr. Henman, I will examine you as regards pig iron. Who is the Controller now?

*Mr. Henman.*—Mr. G. E. R. Slade.

*President.*—Where are his headquarters?

*Mr. Henman.*—At Mahalakshmi.

*President.*—Is he here?

*Mr. Henman.*—He has gone up to Ajmere.

*President.*—When did he go?

*Mr. Henman.*—He went on Saturday.

*President.*—Did he not know that we were examining the Company?

*Mr. Henman.*—Yes. We had a copy of your letter to the Agent in which it was mentioned that some questions would be asked regarding pig iron.

*President.*—Who directs the policy as regards the purchase of stores?

*Mr. Henman.*—The Board of Directors at Home.

*President.*—But here who is the highest officer?

*Mr. Henman.*—The Agent.

*President.*—And the Agent did not know that these questions might be raised.

*Mr. Henman.*—I imagine that he did not realise that questions of policy regarding purchases would be raised.

*President.*—Does not the Agent study the papers?

*Mr. Henman.*—Probably he does not study all the papers.

*President.*—Does he not study papers that he gets from responsible authorities?

*Mr. Henman.*—I should think he does so in every case.

*President.*—Has he given any orders in this particular case?

*Mr. Henman.*—That I could not say. My office is at Mahalakshmi and the Agent's office is at Churchgate and therefore I could not possibly say what orders he might have given as regards papers on this question.

*President.*—It is not merely a question of prices. It is the policy which regulates the purchase of stores. In this case it happens to be pig iron. I take it that you are not concerned with the policy.

*Mr. Henman.*—I am to a certain extent aware of what the policy is.

*President.*—Supposing I ask you whether this policy could be modified, you would not be able to tell me, isn't that so?

*Mr. Henman.*—That is so.

#### *Use of pig iron by the Railway.*

*President.*—There are one or two questions of policy which do arise. Would you be able to tell me why pig iron on a large scale is not used at present by the Bombay, Baroda and Central India Railway for the manufacture of cast iron sleepers?

*Mr. Henman.*—I should reply in that case that the use of cast iron sleepers in the Railway is diminishing.

*President.*—True. Does your department determine what sleepers should be used?

*Mr. Henman.*—No.

*President.*—What department determines that?

*Mr. Henman.*—I should say the Engineering Department would be the determining authority.

*President.*—The final authority would be the Agent.

*Mr. Henman.*—It is a case in which the Agent would probably not exercise his authority.

*President.*—But orders would not be issued without his sanction.

*Mr. Henman.*—No.

*President.*—In this case I take it that you have merely come to tell us what quantities of pig iron were purchased.

*Mr. Henman.*—Yes.

*President.*—I suppose you would convey the observations that I made this morning to the proper authorities.

*Mr. Henman.*—I will do that.

*President.*—I do not wish to make any comments unless the parties are informed of what is being done. It is their business that if they want to say anything they must take steps to do so. This is our first experience of this kind. How long have you been in charge of this?

*Mr. Henman.*—I have been acting as Deputy Controller for about six months.

*Pig iron purchase.*

*President.*—Would you please give me the rates at which you purchase pig iron from these different people?

*Mr. Henman.*—I haven't got the information at the moment.

*President.*—What we wanted to know was how prices were determined and on what principles.

*Mr. Henman.*—As regards pig iron, I haven't got the prices with me. I have prices only of the steel.

*President.*—Steel we are not immediately concerned with. What I wanted to know was how the prices compared. You buy three or four different kinds of pig iron.

*Mr. Henman.*—Yes.

*President.*—I wish to know how the prices compared. Will you be able to send me the figures?

*Mr. Henman.*—Yes.

*President.*—You must state in each case whether it is f.o.r. works or f.o.r. destination so that prices may be comparable.

*Mr. Henman.*—Yes.

*Complaint against Mysore Iron Works pig iron.*

*President.*—What is this remark "supply complained"?

*Mr. Henman.*—In that year there was a complaint.

*President.*—That is last year.

*Mr. Henman.*—Yes. There was a complaint from the Loco. and Carriage Superintendent, Parel, that a supply of pig iron from the Mysore Iron Works was very dirty and had a lot of slag in it.

*President.*—That is to say, was it outside or was the composition itself bad?

*Mr. Henman.*—There was a good deal of slag and dirt hanging on.

*President.*—That is due to defective casting, I take it.

*Mr. Henman.*—It is due to the defective casting of the pig.

*President.*—That would not prevent the use of the pig iron.

*Mr. Henman.*—Provided the slag was knocked off and clean part of the pig put in, it would not interfere.

*President.*—That is purely a mechanical process.

*Mr. Henman.*—Yes.

*President.*—As regards the specifications there was no complaint

*Mr. Henman.*—No.

*President.*—That sort of defect in casting must take place.

*Mr. Henman.*—Not very often.

*President.*—These are of the same castings.

*Mr. Henman.*—Do you mean in the case of the different makes?

*President.*—These castings are sand castings.

*Mr. Henman.*—This pig iron is cast in sand. We also buy pig iron which is machine cast.

*President.*—There is a difference between the two. In the machine cast pig iron, you don't have it. There is no room for complaint. But as regards sand castings, it is very difficult to avoid it. They should machine them before supplying them.

*Mr. Henman.*—That is the only complaint.

*Dr. Matthai.*—That was the point which you complained about in 1927-28.

*Mr. Henman.*—Yes.

*Dr. Matthai.*—Were they told about it in 1927-28?

*Mr. Henman.*—Yes. They accepted back the supply of 40 tons. The Loco. and Carriage Superintendent sorted out from the pig iron about 40 tons which he refused to use and the Mysore Iron Works removed that and replaced them with a cleaner pig iron?

*President.*—That was all right.

*Mr. Henman.*—Yes.

#### *Prices.*

*President.*—As regards prices I take it that you call for tenders.

*Mr. Henman.*—Yes.

*President.*—Do you specify the quantities and the kind of pig iron you require?

*Mr. Henman.*—What usually happens is that the using officers have a preference, for certain work for certain classes of pig iron. They inform us that they will require during the year an estimated quantity of certain kinds of pig iron. Usually they specify the makes which they want. We then invite tenders and it usually happens that each maker will tender not only against the item in which his name is specified, but against the other items, or most of them, as well, if he has something equivalent to offer. The using departments are then referred to and should the price of an alternative be appreciably better than the price of the make he had originally specified, the using officer will usually recommend the cheaper pig iron provided that it is an equivalent quality.

*President.*—This charcoal pig iron ordinarily is superior to the other pig iron.

*Mr. Henman.*—Yes, for certain work.

*President.*—But you don't pay the price of the charcoal pig iron I understand.

*Mr. Henman.*—The price does compare quite favourably with the other pig iron.

*President.*—There is a difference of 10 or 15 sh. more between the price of charcoal pig iron and the ordinary foundry pig iron. That difference they don't get. You simply take it as if it was ordinary pig iron, I understand.

*Mr. Henman.*—Speaking from memory I don't think there is in our rates as big a difference as that in what we pay, but it is quite possible that even if the rates were higher, we should still buy a certain amount of charcoal pig iron.

#### *Steel Castings.*

*Dr. Matthai.*—You make steel castings, don't you?

*Mr. Henman.*—Yes, in Ajmer there is a steel foundry where steel castings are made.

*Dr. Matthai.*—You make it by the converter process.

*Mr. Henman.*—Yes.

*Dr. Matthai.*—Where do you get pig iron for that?

*Mr. Henman.*—Most of the pig iron that they use there, in the steel process, I believe is English pig iron.

*Dr. Matthai.*—Would it be possible for you to use the Mysore charcoal pig for that purpose?

*Mr. Henman.*—I believe not, but I am not prepared to say so definitely.

*President.*—The specification that you have given in the Remarks Column of the statement submitted by you, does that apply to Iron Pig West Coast Hematite?

*Mr. Henman.*—Yes, it does.

*President.*—This particular kind of pig iron you always buy by specification.

*Mr. Henman.*—Yes. The specification is inserted by the Consulting Engineers to the Home Board when tenders are invited.

*President.*—When you say for steel making, you mean that it is for steel castings.

*Mr. Henman.*—They make the steel before they make steel castings.

*President.*—Do they roll it?

*Mr. Henman.*—It is all casting. I don't think they do any rolling in Ajmer. They have no rolling mills there.

*President.*—Do they use electric furnace or what?

*Mr. Henman.*—Coal furnace.

*President.*—What is the idea of making your own steel there out of pig iron? Is there any particular advantage in it?

*Mr. Henman.*—I do not know what the alternative would be if we want to make our own steel castings. Perhaps in the past we had to make our own steel castings if they were to be made in India at all and in order to make them it would be necessary to make steel.

*President.*—It is rather an expensive way of making steel on a small scale. Steel castings are very often made from scrap.

*Mr. Henman.*—In this case we use an appreciable amount of steel scrap. You cannot make good castings entirely out of scrap. You have to add virgin material as well.

*President.*—I do not know what the special reason is for which you get pig iron first, then you make it into steel and then cast.

*Mr. Henman.*—I don't think that we can obtain steel ready made to be made into castings. I believe that is the position, although it is not my business.

*President.*—I do not know. There must be some special reason for that. These castings are probably for locomotives.

*Mr. Henman.*—Yes, and for carriages and wagons to a certain extent.

*President.*—You build a certain number of meter gauge locomotives there.

*Mr. Henman.*—A number of meter gauge locomotives are entirely built in India.

*President.*—I take it that this pig iron is used in the Ajmer workshop.

*Mr. Henman.*—The English pig iron that we show here (in the statement) is used in the steel foundry.

*President.*—And the rest I take it goes to the Parel workshop.

*Mr. Henman.*—Not all.

*President.*—Please tell me how much of this is used in Parel and how much of it goes to Ajmer.

*Mr. Henman.*—I don't think I can tell you, from this information, exactly how much goes to Parel and how much goes to Ajmer. There are three places in which it is used. There is the Parel Workshop and there are two other shops at Ajmer—the Carriage and Wagon shops where the steel foundry

is and the Loco. Works where locomotives are made. There are two distinct works at Ajmer.

*President.*—I don't remember now. The point I want to know is how much of it will be consumed round about Bombay and how much will go up-country.

*Mr. Henman.*—I shall have to write and give you that information.

*Mysore pig iron.*

*President.*—Do you know at all whether any of this goes to Ajmer, I mean this Mysore pig iron?

*Mr. Henman.*—I could not tell you definitely at the moment because I have not got the information, but I think that most of the Mysore pig is used at Parel.

*Dr. Matthai.*—Like any other kind of Indian pig, I suppose; that is to say, this charcoal pig is not used for any special purpose.

*Mr. Henman.*—I believe that it is used for mixing to make certain kinds of castings, but I cannot give you the details.

*Dr. Matthai.*—For those castings would you find the charcoal pig from Mysore better than the ordinary coke pig?

*Mr. Henman.*—That is what I believe. For certain purposes I believe charcoal pig is better.

*Dr. Matthai.*—Do you know what the phosphorous content of the English pig is?

*Mr. Henman.*—It is shown here as .03 per cent. That is low.

*Dr. Matthai.*—That of course is distinctly lower than that of Mysore.

*Mr. Henman.*—Much lower.

*President.*—When you purchase stores from abroad for use at Ajmer, in calculating the price, you would I think take the c.i.f. landed price in Bombay.

*Mr. Henman.*—Yes.

*President.*—Then, what happens? Do you add to that price the freight from Bombay to Ajmer?

*Mr. Henman.*—The cost of freight is added to the cost of the material.

*President.*—At railway rates?

*Mr. Henman.*—Yes.

*President.*—When you yourself carry what rates do you use?

*Mr. Henman.*—Our stores goods are carried at what is known as revenue rates.

*President.*—That is for accounting purposes.

*Mr. Henman.*—Yes.

*President.*—When you use your own system?

*Mr. Henman.*—Those rates are charged to the goods before they actually go into stores at Ajmer.

*President.*—What I wish to know is what you would do if you wanted to consider which was the cheaper pig iron to be used at Ajmer. Supposing the Indian Iron and Steel Company supplies pig iron from Asansol, that has got to come over foreign railways before it reaches Ajmer.

*Mr. Henman.*—Yes.

*President.*—Your terminus that side is Delhi.

*Mr. Henman.*—Yes.

*President.*—It will have to come *via* Delhi or somewhere near that. You will have to pay on that at foreign railway rates.

*Mr. Henman.*—We will only have to pay according to the foreign railway material rate.



*President.*—From Bombay you will pay your own revenue rate.

*Mr. Henman.*—Yes.

*President.*—There is a difference there.

*Mr. Henman.*—There is a slight difference.

*President.*—So that in calculating the price at Ajmer, the pig iron purchased in India which has got to travel over foreign railways will appear a little more expensive.

*Mr. Henman.*—A little more.

*President.*—Now the same thing would apply to Mysore pig iron.

*Mr. Henman.*—Yes.

*President.*—Up to Bombay it would be travelling always on foreign lines and from Bombay to Ajmer it would go on your own.

*Mr. Henman.*—Yes.

*President.*—So that it is really difficult to find out what the precise difference is as regards prices.

*Mr. Henman.*—Well, it certainly involves careful rating but once you definitely know the rates charged between different places then of course it is a mere matter of calculation.

#### *Requirements for 1929-30.*

*President.*—What are your requirements for next year?

*Mr. Henman.*—Do you mean for the year 1929-30?

*President.*—Yes.

*Mr. Henman.*—Those figures I have not got here. They work out to about 1,700 tons a year.

*Dr. Matthai.*—That is roughly your average for the past two or three years.

*Mr. Henman.*—Yes.

*President.*—There has not been much fluctuation in the Indian pig iron, but all through there have been fluctuations in the case of foreign pig iron.

*Mr. Henman.*—Yes.

*President.*—In 1924-25 you used about 1,000 tons of Iron Pig West Coast Hematite. I suppose you were building more locomotives or doing something in that year.

*Mr. Henman.*—That is quite probable, or it may have been this. We might have had stock left from that 1,000 tons, and consequently the requirement had gone down to 400 tons in the subsequent year.

**The Assam-Bengal Railway.**

*Letter No. A/710, dated the 12th December, 1928.*

In compliance with the request contained in your letter No. 826, dated 19th November, 1928, I beg to forward herewith the following:—

- (1) A list of pig iron purchased by this Railway during the last five years with the sources of supplies.
- (2) A list of tool and special steel purchased by this railway during the last five years with specification and prices.

As regards question No. 2 of your letter the answer is in the negative.

Enclosure.

List of Iron Pig purchased during the last five years with the sources of the supplies.

Description of Stores.	Quantity purchased in 1923.		Sources of the supplies.		Quantity purchased in 1924.		Sources of the supplies.		Quantity purchased in 1925.		Sources of the supplies.		Quantity purchased in 1926.		Sources of the supplies.		Quantity purchased in 1927.		Sources of the supplies.					
	T. C.	Per ton.	Rate.	Vendor's name.	T. C.	Per ton.	Rate.	Vendor's name.	T. C.	Per ton.	Rate.	Vendor's name.	T. C.	Per ton.	Rate.	Vendor's name.	T. C.	Per ton.	Rate.	Vendor's name.				
Iron pig Bengal No. 3.	38	0	52	Bengal Iron & Steel Co.	85	10	52	Bengal Iron & Steel Co.	40	0	74	Bengal Iron & Steel Co.	...	...	...	...	...	...	...	...	...			
Iron pig Bengal No. 2.	...	...	...	...	...	...	...	...	4	13	48	Martin & Co.	...	...	...	...	...	...	...	...	...			
Iron pig Gartsherrie No. 1.	...	...	...	...	...	...	...	...	1	0	156	John King & Co.	...	...	...	...	...	...	...	...	...			
Iron pig Burn machine No. 1.	...	...	...	...	...	...	...	...	78	17	48	Indian Iron and Steel Company.	138	15	{ 48 } { 63 } { 71 }	Indian Iron and Steel Company.	10	0	74	0	74	0	Indian Iron and Steel Company.	
Iron pig Bengal sand cast No. 1.	...	...	...	...	...	...	...	...	...	...	...	Do.	130	6	{ 48 } { 63 } { 71 }	Do.	33	0	75	8	75	8	Do.	
Iron pig Burn sand cast No. 3.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	0	71	8	71	8	Do.
Iron pig Machine cast No. 1.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	139	10	71	0	71	0	Tata Iron and Steel Company.
Iron pig Machine cast No. 3.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	154	3	71	0	71	0	Do.

**The Burma Railways Co., Ltd., Rangoon.**

*Letter dated the 14th December, 1928.*

With reference to your letter No. 826, dated the 19th November, 1928, I beg to furnish below the information asked for, regarding the purchase of the following:—

**(1) Pig Iron.**

1923	. 50 tons from Messrs. Burn & Co., Rangoon.
1924	. 10 tons from Messrs. Tata Iron & Steel Co., Jamshedpur.
	138 tons from Messrs. Burn & Co., Rangoon.
	10 tons from Messrs. Bengal Iron & Steel Co., Calcutta.
	10 tons from Messrs. Mysore Iron Works, Bhadravati.
	Messrs. Harperink Smith & Co., Rangoon.
1925	. 150 tons from Messrs. Burn & Co., Rangoon.
1926	. 200 tons from Messrs. Burn & Co., Rangoon.
1927	. 300 tons from Messrs. Burn & Co., Rangoon.
1928	. 161 tons from Messrs. Burn & Co., Rangoon.
	50 tons from Messrs. Tata Iron & Steel Co., Jamshedpur.

Of the above the only pig iron found unsatisfactory was the 10 tons supplied by the Mysore Iron Works.

**(2) Tool, Alloy and Special Steel.**

**(a) Tool Steel.**

I attach a statement showing the Tool Steel that we are using at present with grade, annual consumption and price.

It is proposed to obtain all our requirements locally, in future, as far as possible.

**(b) Alloy and Special Steel.**

We do not stock any of this.

Enclosure.

Tool Steel.

Description.	Grade.	Average annual consumption.	Price per lb. into stores.	Remarks.
		T. cwt. qr.	Rs. A. P.	
1. Tool Steel, ordinary rounds, $\frac{1}{2}$ inch . . . . .	Carbon or water hardening enst steel. No particular market brand.	0 0 1	0 6 0	No more being ordered this year as sufficient stock is on hand.
2. " " " $\frac{3}{4}$ " . . . . .		0 0 2	0 6 3	
3. " " " $\frac{1}{2}$ " . . . . .		0 0 3	0 6 3	
4. " " " $\frac{1}{2}$ " . . . . .		0 3 0	0 6 0	
5. " " " 1 " . . . . .		0 0 3	0 5 6	
6. " " " $1\frac{1}{2}$ " . . . . .		0 1 2	0 5 0	
7. " " " $1\frac{1}{2}$ " . . . . .		0 3 0	0 5 0	
8. " high speed, flat, 2 inches $\times$ $1\frac{1}{2}$ inches . . . . .	Saville's "Triumph Superb" High Speed Steel.	0 6 0	1 13 9	
9. " " " round, 3 inches . . . . .		0 3 0	2 1 6	
10. " " " square, $\frac{1}{2}$ inch . . . . .	Ditto	0 1 0	1 14 0	
11. " " " " $\frac{3}{4}$ " . . . . .		0 2 0	1 14 0	
12. " " " " $\frac{1}{2}$ " . . . . .		0 2 0	1 14 0	
13. " " " " 1 " . . . . .		0 3 0	1 14 0	
14. " " " " $1\frac{1}{2}$ " . . . . .		0 4 0	1 14 0	
15. " " " " $1\frac{1}{2}$ " . . . . .		0 2 0	1 14 0	
16. " " " rectangular, $\frac{1}{2}$ inch $\times$ $\frac{1}{2}$ inch . . . . .	Ditto	0 0 2	2 12 0	

**The Great Indian Peninsula Railway.**

A.—WRITTEN.

*Letter dated the 5th January, 1929.*

**APPLICATION FOR REMOVAL OF EXISTING REVENUE DUTIES UPON RAW MATERIALS  
(PIG IRON).**

With reference to your letter No. 826, dated 19th November, 1928, I attach statements giving the information asked for in items 1 (1) and (2). Five spare copies of the statements are also enclosed.

2. In regard to item 1 (2) I am to say that we have had no cause to complain of the quality of pig iron of Indian manufacture.

Enclosure.

*Statement showing the quantities of Pig iron purchased in India by the Great Indian Peninsula Railway during the 5 years ended 31st March, 1928.*

Description.	Quantity.	Name of suppliers,
	T. C. Q. lbs.	
Fig Iron No. 1 . . .	2,295 9 2 0	Burn & Co., Managing Agents, The Indian Iron & Steel Co., Calcutta.
Do. . . . .	50 0 0 0	Balmer Lawrie & Co., Ltd., Bombay.
Do. . . . .	100 0 0 0	Harvey Perkins & Co., Bombay.
Do. . . . .	1,263 16 2 0	The Mysore Iron Works, Bhadravati.
Do. . . . .	700 0 2 0	Martin & Co., Managing Agents, The Bengal Iron Co.
Do. . . . .	350 0 0 0	Controller of Stores, E. I. Railway.
<b>Total</b> . . . . .	<b>4,759 6 2 0</b>	
Fig Iron No. 2 . . .	20 0 0 0	The Mysore Iron Works, Bhadravati.
Do. . . . .	19 0 0 0	Burn & Co., Managing Agents, The Indian Iron & Steel Co., Calcutta.
<b>Total</b> . . . . .	<b>39 0 0 0</b>	
Fig Iron No. 3 . . .	812 1 2 0	Do. do.
Do. . . . .	2,155 0 0 0	Controller of Stores, E. I. Railway.
Do. . . . .	301 12 1 0	Martin & Co., Managing Agents, The Bengal Iron Co., Calcutta.
Do. . . . .	560 0 0 0	The Mysore Iron Works, Bhadravati.
Do. . . . .	50 0 0 0	The Tata Iron & Steel Co., Jamshedpur.
<b>Total</b> . . . . .	<b>3,878 13 3 0</b>	
Fig Iron Scotch grade .	100 0 0 0	The Mysore Iron Works, Bhadravati.

Statement showing the quantities, specifications and the prices of the Tool, Alloy and Special Steel which are used at the Great Indian Peninsula Railway Workshop at Parel.

Description of Articles.	Specifications.	Quantity purchased from	Book Value.
		1st April, 1927, to 31st March, 1928.	
		T. C. Q. lbs.	Rs. A P.
Flat tool steel high speed $1\frac{1}{2} \times 1\frac{1}{2}$ "	18 per cent. Tungsten	0 0 0 26 $\frac{1}{2}$	59 10 0
" " " " " $1\frac{1}{2} \times 1\frac{1}{2}$ "	" "	0 1 5 8	510 0 0
" " " " " $2 \times 1\frac{1}{2}$ "	" "	0 1 0 1	215 14 0
" " " " " $1 \times 1\frac{1}{2}$ "	" "	0 12 2 20	2,797 2 0
" " " " " $2 \times 1\frac{1}{2}$ "	" "	0 0 1 25	9 12 0
" " " " " $1\frac{1}{2} \times 1\frac{1}{2}$ "	" "	0 11 3 3	2,519 5 0
Round " " " " $\frac{1}{2}$ " dia.	" "	0 0 3 21	196 14 0
" " " " " $\frac{1}{2}$ " "	" "	0 0 3 8 $\frac{1}{2}$	150 5 0
" " " " " 1" "	" "	0 0 3 17	164 2 0
" " " " " 1 $\frac{1}{2}$ " "	" "	0 6 2 6 $\frac{1}{2}$	1,229 15 0
" " " " " 3 $\frac{1}{2}$ " "	14 per cent. Tungsten	0 1 3 27	473 14 0
" " " " " 4" "	" "	0 2 0 24	408 0 0
Round pneumatic tool steel Osborn's C. P. 3" dia.	.....	0 3 1 17	255 2 0
Round pneumatic tool steel Osborn's C. P. 1 brand 2 $\frac{1}{2}$ " dia.	.....	0 8 2 11	644 15 0
Round tool steel high speed polished with flat on one side $\frac{1}{2}$ " dia.	18 per cent. Tungsten	0 0 2 23 $\frac{1}{2}$	189 12 0
Square tool steel H. S. for lathes turning and boring tools $\frac{1}{2}$ " sqr.	" "	0 1 3 10	433 0 0
Square tool steel H. S. for lathes turning and boring tools $\frac{1}{2}$ " sqr.	" "	0 1 1 18	296 4 0
Square tool steel H. S. for lathes turning and boring tools 1" sqr.	.....	0 5 1 12 $\frac{1}{2}$	1,137 7 0
Square tool steel H. S. for lathes turning and boring tools 1 $\frac{1}{2}$ " sqr.	18 per cent. Tungsten	0 0 3 13	178 14 0
Square tool steel H. S. for lathes turning and boring tools 1 $\frac{1}{2}$ " sqr.	" "	0 6 2 13 $\frac{1}{2}$	1,430 14 0
Flat cast steel temper D, $1\frac{1}{2} \times 1\frac{1}{2}$ "	.....	0 0 2 0	14 0 0
" " " " " E, $4\frac{1}{2} \times 1\frac{1}{2}$ "	.....	0 2 0 26	78 2 0

Description of Articles	Specifications.	Quantity	Book Value.
		purchased from 1st April, 1927, to 31st March, 1928.	
		T. C. Q. lbs.	Rs. A. P.
Octagon cast steel temper D, $\frac{1}{2}$ "	85 to '95 percent. carbon	0 1 1 11	47 3 0
" " " " C, $1\frac{1}{4}$ "	.....	0 4 2 17	101 7 0
" " " " C, $1\frac{1}{2}$ "	.....	0 0 3 9	29 14 0
" " " " C, $1\frac{3}{4}$ "	.....	0 5 0 15	164 9 0
Round cast steel temper C, $\frac{1}{2}$ " dia.	1.0 to 1.10 percent. carbon	0 1 0 11	38 7 0
" " " " C, $\frac{3}{8}$ "	" "	0 2 0 4	68 3 0
" " " " C, $\frac{1}{2}$ "	" "	0 1 3 11	73 15 0
" " " " C, $\frac{1}{4}$ "	" "	0 0 2 0	105 0 0
" " " " C, 1"	" "	0 3 3 18 $\frac{1}{2}$	135 0 0
" " " " C, $1\frac{1}{4}$ "	" "	0 2 8 23	103 2 0
" " " " C, $1\frac{1}{2}$ "	" "	0 2 2 16	105 11 0
" " " " C, $1\frac{3}{4}$ "	" "	0 10 2 12	439 10 0
" " " " C, $1\frac{1}{2}$ "	" "	0 2 3 15	86 8 0
" " " " C, $1\frac{1}{4}$ "	" "	0 3 0 4	97 2 0
" " " " C, 2"	" "	0 2 3 23	103 7 0
" " " " C, $2\frac{1}{4}$ "	" "	0 1 0 6	42 2 0
" " " " C, 3"	" "	0 2 3 19 $\frac{1}{2}$	117 1 0
" " " " C, $1\frac{1}{2}$ "	" "	0 1 1 23 $\frac{1}{2}$	75 14 0
" " " " C, $3\frac{1}{2}$ "	" "	0 7 3 6	858 6 0
" " " " F, $1\frac{1}{2}$ "	'65 to '75	0 2 2 13	58 0 0
Square " " " C, $\frac{1}{2}$ " sq.	1.05 to 1.10	0 3 1 26	115 8 0
" " " " C, $2\frac{1}{4}$ "	.....	0 2 0 6 $\frac{1}{2}$	107 2 0
Round steel class D to B. S. S. No. 8, $2\frac{1}{4}$ ", contains approx. 0.4 per cent. carbon.	.....	0 9 2 10	110 4 0
Square steel class D to B. S. S. No. 8, 6", contains approx. 0.4 per cent. carbon.	.....	1 9 0 0	288 3 0



**GREAT INDIAN PENINSULA RAILWAY.**

**B.—ORAL.**

**Evidence of Mr. D. S. BURN, Agent, and Mr. H. J. RAPER, Deputy  
Traffic Manager, Great Indian Peninsula Railway, recorded  
at Bombay on Monday, the 7th January, 1929.**

*Pig Iron.*

*President.*—Now as regards Pig Iron, the Bhadravati Iron Works, Mysore, are rather badly situated in respect of its market. The point that we have to consider is this: they manufacture charcoal pig iron which is really speaking superior to the ordinary coke pig iron. At present there is no demand for this special class of pig iron in this country. Therefore they have got to sell it in competition against the coke pig iron and they have to quote a price which will compare favourably with the import price on which is based the price of Indian pig iron made by the Bengal Iron Company and the Indian Iron and Steel Company. We are considering whether the duty on pig iron should be abolished or not. There is a duty at present of 10 per cent. *ad valorem* on pig iron. It is acting as far as we can see at present merely as a protective duty though pig iron does not require protection. As you know it is a flourishing industry and the price of pig iron is raised to the extent of the duty. If we abolish the duty, then the Bhadravati Iron Works, Mysore, which manufacture a superior kind of pig iron would get a still lower price and the point that we want to consider is whether on the whole it would not pay the Railway Administrations to pay a little more for the Mysore pig iron than they do and get the rest cheaper by the amount of the duty, thus on the balance saving on it their pig iron purchases.

*Mr. Burn.*—I follow that.

*President.*—That is the point we are considering and it all depends on the demand of the railways for pig iron. Supposing you are using 20,000 tons of pig iron a year. The duty works out at Rs. 7 a ton. Therefore you lose Rs. 1,40,000 a year. But if the duty is abolished and if you buy 500 tons of Mysore pig iron for which you pay Rs. 10 more per ton, you will lose Rs. 5,000 whereas you will save on the other side Rs. 1,05,000.

*Mr. Burn.*—Yes.

*President.*—I think we will write to you and let you know. As regards this question of policy I may have to have your views as to what may be done.

### The Bengal Nagpur Railway.

A.—WRITTEN.

(1) Letter dated the 26th January, 1929.

With reference to your letter No. 826, dated the 19th November, 1928, I have the honour to reply as under:—

1. (i) Please see Statement "A" enclosed herewith.
- (ii) There has been no occasion to complain about the quality of the pig iron purchased from the Indian Manufacturers.
2. Please see Statement "B" enclosed herewith.

Enclosure.

#### STATEMENT "A".

Name of article.	Vendor's name.	Purchases.				
		1924.	1925.	1926.	1927.	1928.
		Tons.	Tons.	Tons.	Tons.	Tons.
Pig iron No. 1	Tata iron and Steel Company.	385½	384	168	120	30
Do.	Indian Iron and Steel Company.	..	..	..	..	240
Pig iron No. 3	Tata Iron and Steel Company.	312	1,139	76	..	...
Do.	Burn and Company	..	..	..	..	120
Do.	Agents, Indian Iron and Steel Company.	..	..	..	..	48

#### STATEMENT "B".

Steel Tool C. S. (1) as per following specification.

- (a) Carbon content 1.25 per cent. to 1.35 per cent.
- (b) Manganese not exceeding 0.30 per cent. Tungsten content 4 per cent. to 5 per cent.
- (c) Nickel Chrome.
- (d) Vanadium, etc., to Maker's specification.

Sizes.	Approximate yearly consumption.	Price.
Round 5"	} 60 cwts.	Between Rs. 98 and Rs. 100 per cwt.
4"		
3"		
2"		
1½"		
1¼"		
¾"		

*Steel Tool C. S. (2) to some specification as at page 196 of Statement B.*

Sizes.	Approximate yearly consumption.	Price.
Round 1½" : : : } 1½" : : : } 1½" : : : }	7 cwts.	Rs. 67 per cwt.

*Steel Tool C. S. (3).*

Specification:—Special alloy carbon steel for pneumatic rivet snap.

Size.	Approximate yearly consumption.	Price.
Round 2" . . . .	7 cwts.	As. 10 per lb.

*Steel Tool C. S. (4) as per specification as under.*

(a) Shock resisting alloy carbon steel for pneumatic cutting tools such as chisels, etc.

Size.	Approximate yearly consumption.	Price.
Hexagonal 1½"	6 cwts.	Rs. 65 per cwt.

*Steel Tool C. S. (6) as per following specification.*

- (a) Carbon content .8 per cent. to .9 per cent.
- (b) Manganese not exceeding .40 per cent.
- (c) A small percentage of toughening content, such as 2 per cent. nickel is required.

Sizes.	Approximate yearly consumption.	Price.
Hexagonal 1½" : : : } 1½" : : : }	25 cwts.	Rs. 37-8 per cwt.

*Steel Tool M. S. S. (1) as per following specification.*

- Tungsten content to be not less than 20 per cent.
- Manganese 0.25 per cent. maximum.
- Carbon 0.6 per cent. to 0.7 per cent.
- Cromium, Vanadium and other special factors will be to Maker's specification.

All high speed steel to be thoroughly annealed.

Sizes.	Approximate yearly consumption.	Price.
Square 1½" : : : } 1½" : : : } 1½" : : : } 1½" : : : } 1½" : : : } Flat 3" x 1½" : : : }	80 cwts.	Between Rs. 2-1-6 and 2-5-0 per lb.

*Steel Tool H. S. S. (2) as per specification.*

(a) Tungsten content 17.5 per cent. to 18.5 per cent. otherwise similar to H. S. S.

(All high speed steel to be thoroughly annealed.)

Sizes.	Approximate yearly consumption.	Price.
Square 1½" . . . . .	} 21 cwts.	Between Rs. 1-10 and Rs. 1-12 per lb.
1½" . . . . .		
1" . . . . .		
¾" . . . . .		
¾" . . . . .		
Flat 1½" x ½" . . . . .	} 21 cwts.	Between Rs. 1-10 and Rs. 1-12 per lb.
1" x ¾" . . . . .		
¾" x ½" . . . . .		
Tapered 1" x ½" x ¾" . . . . .		Rs. 2-4 per lb.

*Steel Tool H. S. S. (3) as per following specification.*

(a) Tungsten content 13.5 per cent. to 14.5 per cent. otherwise similar to H. S. S. (1).

(All high speed steel to be thoroughly annealed.)

Sizes.	Approximate yearly consumption.	Price.
Square 1½" . . . . .	} 22 cwts.	Between Rs. 1-5 and Rs. 1-11-9 per lb.
1½" . . . . .		
1" . . . . .		
Round 5" . . . . .		
4½" . . . . .		
2½" . . . . .		
2" . . . . .		

*Other Steels.*

Round, Squares, Hexagon and Flats.	Approximate yearly consumption.	Price.
	Tons.	Per cwt.
Steel to B. E. S. A. Specn. 9/1921, Class B . . . . .	800	Between Rs. 8 and Rs. 12.
Bright steel bar to B. E. S. A. Specn. 32/1921, Grade II . . . . .	120	Between Rs. 11-8 and Rs. 14-8.
Mild steel angles, tees, channels and joints to B. E. S. A. 17A/1921 . . . . .	500	Between Rs. 7-8 and Rs. 8-8.
Mild steel sheets, plates, 1/16" to 1" to B. E. S. A. 17A/1921 . . . . .	800	Between Rs. 7-8 and Rs. 9-12.
Spring steel for volute Springs . . . . .	280	Between Rs. 11-7 and Rs. 15-4.
Spring for laminated Springs . . . . .	500	Between Rs. 9-15 and Rs. 12-9.

Special Steel.	Size.	Approximate yearly consumption.	Price.
Steel, long strand (Brown Balleye) . . . . .	½" } 2½" }	120 tons.	Between Rs. 19 and Rs. 21-8 per cwt.

No Specification is available for this proprietary steel.

(2) Letter No. C4792/21/360, dated 6th March, 1929, from the Bengal Nagpur Railway Company, Limited.

In compliance with the President's request to me to-day I have the honour to note below the numbers of cast iron sleepers which have been or will be placed in the road on the B. N. Railway during the years shown against each:—

1928-29	. . . . .	220,000
1929-30	. . . . .	100,000
1930-31	. . . . .	110,000

These sleepers are supplied to the Railway by the Bengal Iron Company, and Messrs. Burn & Co. None are cast by the Railway.

I also enclose a copy of our freight rate agreement with Messrs. The Tata Iron and Steel Company.

#### APPENDIX.

MEMORANDUM OF AGREEMENT MADE the 28th day of August one thousand nine hundred and nine between the Tata Iron and Steel Company, Limited, a Company incorporated under the Indian Companies Acts 1882 to 1895 and having their registered office at Bombay (hereinafter called the Steel Company) of the one part and the Bengal Nagpur Railway Company, Limited, (hereafter called the Railway) of the other part whereby it is agreed as follows:—

1. Subject to the conditions contained in clause 3 and clause 4 (2) hereof—
  - (a) Raw materials from any station on the Railway to Kalimati for the manufacture of Iron and Steel of all kinds at the works there situated;
  - (b) Materials of all kinds and plant required for initial construction of the works from any station on the Railway to Kalimati provided always that such plant can be loaded on existing wagons of the Railway;
  - (c) Finished products and by-products of coking ovens sent from Kalimati to Calcutta for shipment;

will be carried by the Railway at a charge for carriage of one-fifteenth pie per maund per mile exclusive of ferry charges and transhipment charges where transhipment between gauges is necessary and which excluded charges are to be fixed in addition.

2. All manufactured articles despatched by rail from the works except those specified as (c) in clause 1 will be carried at the minimum rate sanctioned on the first of January one thousand nine hundred and five by the Government of India for each class of articles as specified in the Goods Tariff of the Railway in force on the first of January one thousand nine hundred and five or at such lower rate as may be introduced by the Railway from time to time for carriage of such articles for the public.

3. The rates to be conceded under clauses 1 and 2 will only be given subject to the following conditions:—

- (a) That the materials and goods of all kinds are carried at owner's risk.
- (b) That the ton mileage on which freight has to be paid of material and goods of all kinds carried by the Railway for the Steel Company to or from the works in any one calendar year shall

not be less than thirty millions subject to the exception in clause 3, sub-clause (d). )

- (c) That the minimum distance for any consignment on which the charge shall be calculated at the reduced rate shall be fifty miles.
- (d) That the charges levied by the Railway at the reduced rates shall be calculated on the full marked carrying capacity of any wagon used and that the loading and unloading of wagons with freight for distance three hundred miles and under shall be done by or at the expense of the Steel Company. The Steel Company may have the option of being charged at tariff rates instead of the reduced rates for consignments of any weight or for any distance and in cases where such option is exercised the consignments so carried in any year will not be included in the total of thirty millions ton miles as per clause 3 (b) hereof.
- (e) That all Railway works required for the service of the Steel Company within the boundaries of the Steel Company's premises shall be carried out by or at the cost of the Steel Company and that the Engines and Rolling Stock of the Railway shall not be required to enter upon any lines the property of the Steel Company until such lines have been certified by the Chief Engineer of the Railway as safe and adequate for the Engines and Rolling stock to be employed thereon.
- (f) That material and goods of all kinds offered for despatch by rail to and from the works shall be carried in whatever class of wagon is most convenient to the Railway except that the Wagons used for the carriage of iron ore from Gurumasini to the works at Kalimati will be Hopper bottom Wagons of not less than twenty-three tons carrying capacity and will be provided by the Railway. Whenever possible the Railway will carry coal required for the works in dump wagons of their K. C. or K. E. Class.

4. (1) In the first instance rates will in all cases be charged at Tariff rates and at the end of every Calendar year a rebate will be payable to the Steel Company of the difference between Tariff rates and the rates mentioned in clauses 1 and 2 subject to the conditions contained in clause 3 and to a minimum traffic of thirty millions ton miles a year having been carried. A proportional rebate will be given every six months final adjustment being made at the end of each year.

(2) To cover the period of construction and development of the works the rebate will during the first five years from first July one thousand nine hundred and eight be payable to the Steel Company at the end of every half-year irrespective of the conditions regarding annual minimum in Clause 3 (b) subject to its being afterwards ascertained at the end of such five years that the total carried at reduced rates during that period shall have amounted to thirty millions ton miles. By whatsoever amount the total ton mileage during this period may have fallen short of thirty millions ton miles, the railway shall be repaid by the Steel Company the difference between one-fifteenth pie per maund per mile and the minimum tariff rate. For instance if during the period above mentioned the Steel Company had only provided the Railway with a total of twenty-five millions ton miles at the reduced rates, the amount payable by the Steel Company as an adjustment would be the full minimum tariff rate as referred to in Clause 2 minus one-fifteenth pie per maund per mile on five millions ton miles.

5. Traffic will be made over or taken over in the exchange sidings to be provided by the Railway at Kalimati. The Steel Company will do their own shunting from those exchange sidings to the works, but in the case of a breakdown of locomotives belonging to the Steel Company the Railway

will temporarily do shunting for them at a charge of Rupees Eight per hour, with a minimum of Rupees Fifty a day. The running charge of Rupees one and annas eight per engine mile to be paid by the Steel Company to the Railway for bringing an engine from the nearest shed of the Railway to the works.

6. *Free time for loading and unloading.*—From the time a wagon is made over to the Steel Company in the exchange sidings at Kalimati to the time of its return forty-eight hours will be allowed free: beyond that time demurrage will accrue under the rules laid down in paragraphs 115 and 116 of the Railway Goods Tariff, Part I of 1907, subject to such revision as may from time to time be made in the above rules and such demurrage shall be paid by the Steel Company to the Railway. In the case of a loaded wagon made over to the Steel Company and returned loaded a further free time of twenty-four hours or seventy-two hours in all will be allowed.

7. *Damages to Stock.*—The Steel Company will pay for all damages done to the stock of the Railway while in their charge.

8. *Supply of Wagons.*—The Railway will spare no effort to meet the Wagon requirements of the Steel Company but no preferential claim for wagons can be accorded to the Steel Company.

9. The Railway will construct subject to the approval of the Government of India a branch Railway from the ore mines at Gurumasini to a suitable point on the existing Railway line.

10. This agreement as above set forth shall continue to first July one thousand nine hundred and thirty-three and then be subject to consideration and revision as to terms of renewal and if then renewed shall be similarly subject to consideration and revision at the end of each ten years.

11. In any case of difference of opinion between the two parties the Steel Company and the Railway as to the construction of any part of this Contract or as to its application to any particular case or in reference to any matter arising thereunder either party shall be entitled to call for an Arbitration to be held in Calcutta and to be conducted in the usual manner of a reference to the Arbitration of two Arbitrators under the terms of the Indian Arbitration Act, 1839, save that the notice by one party to the other to appoint an Arbitrator shall be a notice of eight weeks and that the Arbitrators shall appoint an Umpire before entering upon their reference.

IN WITNESS WHEREOF the Steel Company and the Railway have caused their respective common seals to be hereunto affixed the day and year first above written.

The common seal of the Tata Iron and Steel Company, Limited, was hereunto affixed pursuant to the authority of the Directors of the Company in the presence of—

TATA SONS & CO., Agents.

Witness—

VITHALDAS D. THACKERSEY.  
NAROTTAM MORARJUPOTMDAS.  
K. S. ANJAB,

Navsari Buildings,

Fort Bombay.

Signed by the Bengal-Nagpur Railway Company, Limited, through their Attorney G. O. Godfrey, duly constituted under Power of Attorney, dated 24th December 1908, in the presence of—

G. O. GODFREY.

PALLISTER YOUNG,

Personal Assistant to the Agent,

B. N. Railway.

**THE BENGAL NAGPUR RAILWAY COMPANY, LIMITED.**

B.—ORAL.

Evidence of Messrs. A. DUNCAN and R. A. LEAKEY recorded at  
Calcutta on Tuesday, the 5th March, 1929.

*Pig Iron.*

*President.*—As regards pig iron, I don't think you are interested in it on any large scale?

*Mr. Duncan.*—No.

*President.*—I take it you don't use cast iron sleepers.

*Mr. Duncan.*—No, we are substituting steel.

*Mr. Mathias.*—You are getting this from the Tata Iron and Steel Company?

*Mr. Duncan.*—Yes. I can give you the actual information for the year if you like.

*President.*—Where are your principal works?

*Mr. Duncan.*—Kharagpur. I can give you information as to how many cast iron sleepers were put on the road and the amount of pig iron used in the workshops.

*President.*—Do you buy cast iron sleepers locally?

*Mr. Duncan.*—We buy them from the Bengal Iron Company and Messrs. Burn & Co.

*Mr. Mathias.*—Your pig iron is used in the workshops for other purposes?

*Mr. Duncan.*—Yes.

*Mr. Mathias.*—For a big railway like yours I should think your pig iron consumption is very low. What castings are you doing in your workshops?

*Mr. Duncan.*—Engine fittings, wagon fittings, etc.



**The East Indian Railway, Calcutta.**

**A.—WRITTEN.**

**(1) Letter dated the 2nd February, 1929.**

With reference to the ultimate para. of Agent's letter No. A. T.-556 of 29th January, 1929, I am directed to forward herewith a statement of pig iron for the information of your Board, as asked for in paragraph 1 (1) of your letter No. 826 of 19th November, 1928.

In reply to paragraph 1 (2), I beg to inform you that we have no complaints to make.

Regarding paragraph 2, necessary information will follow at an early date.

Enclosure.

## Receipts of Iron, Pig, during the last five years.

Description.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	T.	T.	T.	T. C.	T. C.
Iron, Pig, Bengal, No. 3.	14,220 Kulti.	...	...	...	...
Iron, Pig, Bengal, No. 3-F.	10,799 Kulti.	...	...	...	...
Basic (Burn No. 1)	10 S. C. 1260 D, from Biranur.	...	...	...	...
Tata Basic . . .	4,050 S. C. 2 D of 1st April, 1924, Jamshedpur.	...	...	...	...
Tata No. 1 . . .	2,037 S. C. 1392 D of 29th January, 1923, and 2 D of 1st April, 1924, Jamshedpur.	...	...	...	...
Burn Basic . . .	...	4,230 Burn & Co.	2,430 Burn & Co.	4,500 18 Burn & Co., Indian Iron & Steel Co.	4,107 6 Burn & Co.
Burn No. 1 . . .	...	1,026 Do.	...	1,278 6 Do.	1,595 10 Burn & Co. and Iron & Steel Co., Calcutta.
Tata No. 1 . . .	...	About 42 Tata, Jamshedpur.	...	...	...
Tata No. 4 . . .	...	999 Do.	...	...	...
Burn No. 3 . . .	...	...	4,253 Burn & Co.	13,765 0 Burn & Co., Indian Iron & Steel Co. & Tata.	15,215 0 Burn & Co., Iron & Steel Co., Calcutta.
Burn No. 3-F. . .	...	...	4,062 Do.	17,447 0 Burn & Co., Indian Iron & Steel Co.	12,465 15 Do.
Burn No. 4 . . .	...	...	...	666 14 Burn & Co. 815 0 Indian Iron & Steel Co., Agent of Burn & Co.	1,654 10 Do.

(2) Letter No. A. T.-556, dated the 14th May, 1929, from the East Indian Railway.

**Re Pig Iron.**

When recording the evidence of Dr. Horn, Controller of Stores of this Railway, on the 4th March last, your Board desired certain information which was not available at the moment. The required information has since been collected and is detailed below:—

1. The rates paid for Pig Iron in 1925-26, 1926-27, 1927-28 and 1928-29 were as follows:—

1925-26—No purchase.

1926-27—

Pig Iron (Silicon Content 2.5 min. to 3.25 per cent. max.) at Rs. 71 per ton.

Pig Iron (Silicon Content 1.5 min. to 2.25 per cent. max.) at Rs. 69 per ton.

No. 4 at Rs. 67 per ton.

1927-28—

No. 1 at Rs. 71 per ton.

Pig Iron (Silicon Content 1.5 min. to 2.25 per cent. max.) or 3F. at Rs. 69½ per ton.

1928-29—

Purchase in April, 1928—

No. 1 at Rs. 71 per ton.

No. 3F. at Rs. 69 per ton.

No. 4 at Rs. 67 per ton.

Purchase in May, 1928—

No. 1 at Rs. 64 per ton.

No. 3F. at Rs. 62 per ton.

No. 4 at Rs. 61 per ton.

2. The reason why our specifications for Pig Iron No. 1 and No. 3 are the same is that these numbers represent different brands made to the same specification. When we deal with Messrs. Burn and Co. it is called No. 3.

3. We are buying less Pig Iron this year as we have some surplus both in Pig Iron and Cast Iron Sleepers. It is impossible to give an accurate estimate of our future consumption, but we anticipate it will be about 15,920 tons for 1929-30.

4. For your information I have recently called for tenders at Home as well as locally, and received the following quotations:—

D G. of Stores. London.	Mysore Works.	Tata Iron and Steel Works.	Indian Iron and Steel (Burn's).	Bengal Iron Works (Martin's).	Quantity to
Per ton.	Per ton.	Per ton.	Per ton.	Per ton.	Tons.
No. 8 at Rs. 77-14-8	at Rs. 45 (1) " 65 (2)	Rs. 64	Rs. 64	Rs. 69	12,800
No. 3F. at Rs. 77-14-8	at " 45 (1) " 63 (2)	" 62	" 62	" 67	3,000
No. 4 at Rs. 77-14-8	at " 42 (1) " 62 (2)	" 61	...	" 66	120
F.O.B. Calcutta plus freight to Jamalpur Rs. 3-11-0 per ton.	F.O.B. Bhatravati (1) Jamalpur (2) with K. M. C.	F.O.B. Tatanagar plus freight to Jamalpur Rs. 4-13-0 per ton.	F.O.B. Borachak plus freight to Jamalpur Rs. 1-15-9 per ton.	F.O.B. Kulti plus freight to Jamalpur Rs. 1-15-9 per ton.	

I have obtained my requirements locally in consequence.

5. The quantity imported in 1924 was only 2,500 cwts. of Gray Hematite, and we are not likely to get any more.

The record of evidence tendered by the representatives of this Railway is returned herewith duly corrected.

*Specifications for Pig Iron.*

*Pig Iron No. 3.*—Similar to that supplied by Messrs. Burn, Tata or Bengal Iron Company. This is the same as No. 1—

Silicon, 2.5 to 3.25 per cent.

Manganese, 1.00 minimum per cent.

Phosphorus, .40 maximum per cent.

Sulphur, .03 maximum per cent.

} Used half in steel foundry and half in other castings.

*Pig Iron No. 3F.*—Similar to that supplied by Messrs. Burn, Tata or Bengal Iron Company—

Silicon, 1.5 to 2.25 per cent.

Manganese, 1.00 minimum per cent.

Phosphorus, .40 maximum per cent.

Sulphur, .04 maximum per cent.

} Used in plate foundry.

*Pig Iron No. 4.*—Similar to that supplied by Messrs. Burn, Tata or Bengal Iron Company—

Silicon, 1.00 to 1.75 per cent.

Manganese, 1.00 minimum per cent.

Phosphorus, .40 maximum per cent.

Sulphur, .05 maximum per cent.

} Used in plate foundry.

*N.B.*—Prices are quoted in the letter attached.

## EAST INDIAN RAILWAY.

B.—ORAL.

Evidence of Dr. W. R. HORN and Messrs. B. F. HIGMAN and J. C. ROSE, recorded at Calcutta on Monday, the 4th March 1929.

*Pig iron.*

*President.*—We will take the pig iron question first. As regards pig iron the point we are considering is whether this revenue duty of 10 per cent. on pig iron should be abolished or not. There is a revenue duty of 10 per cent. on pig iron, but practically no pig iron is imported now and therefore it is acting as a protective duty. It is suggested therefore, that this raises the price of pig iron in the country and the industries using pig iron are prejudiced. The idea is to consider whether this revenue duty should be retained any longer. There is, however, another question connected with this and that is that there is, as you know, an Iron Works in Mysore which is rather small.

*Dr. Horn.*—That is Bhadravati Iron Works.

*President.*—Yes. It wants this duty to be retained because it may happen that it will hit that Works. Of course its production is very much smaller than any of these Works here and though the Works situated in the Indian State is small, we cannot absolutely ignore the effect of the policy in British India on an industry situated in an Indian State. The whole point is this: how far your prices are likely to be reduced if this duty is abolished. In the statement that you have given us I don't think you have mentioned the rates at which you are purchasing pig iron. That is rather an important point.

*Dr. Horn.*—I will give you the rates.

*President.*—Will you give me the rates for 1925-26, 1926-27, 1927-28 and 1928-29?

*Dr. Horn.*—I am afraid I haven't got them here.

*President.*—You can send them later on. This pig iron in Statement A, what is it?

*Dr. Horn.*—That statement shows the composition and qualities of the steel and their purchases.

*President.*—Which of these corresponds to say No. 3 Cleveland? What we want to see is how these prices compare with the import prices. I think the Metallurgical Association suggested that the price of Cleveland No. 3 would be a fair comparison.

*Dr. Horn.*—The prices ranged from Rs. 60 to Rs. 64; Rs. 64 is pig iron No. 1 and also No. 3.

*President.*—And the others?

*Dr. Horn.*—Rs. 60.

*President.*—These are the present prices?

*Dr. Horn.*—Yes, this financial year. Rs. 60 for basic pig iron, silicon content not exceeding 5 per cent. Rs. 62 for pig iron No. 3 F and Rs. 61 for No. 4.

*President.*—Is that delivered at Asansol?

*Dr. Horn.*—That is ex-works. The freight from Borrachak or Kulti to Jamalpur is Rs. 1-15-9. The whole of this pig iron is consumed at Jamalpur.

*President.*—It would work out to an average of Rs. 63 or so roughly?

*Dr. Horn.*—Yes. I have got Mysore steel here Nos. 1, 3 F and 4 at Rs. 65 per ton free on rail Bhadravati. The railway freight is Rs. 36-5-11 from Bhadravati to Jamalpur.

*President.*—Is that at railway rates?

*Dr. Horn.*—Yes.

*President.*—What is the distance?

*Dr. Horn.*—About 1,500 miles. For pig iron No. 1 they quoted Rs. 72 a ton f.o.r. Shalimar.

*Mr. Mathias.*—What is the difference between No. 1 and No. 3?

*Dr. Horn.*—No. 3 F and No. 4 are used in connection with sleepers; No. 3 is used for steel castings and general castings.

*Mr. Mathias.*—I see that the specifications of Nos. 1 and 3 are the same.

*Dr. Horn.*—I will have this checked.

*Mr. Mathias.*—Will you have these specifications checked and send six copies with the prices quoted?

*Dr. Horn.*—Yes.

*Mr. Mathias.*—Do you find these satisfactory for steel castings?

*Dr. Horn.*—Yes.

*President.*—I see that in the last two years your consumption of pig iron has gone up. What do you use this for chiefly?

*Dr. Horn.*—We manufacture at Jamalpur cast iron sleepers in very large quantities.

*President.*—Has the East Indian Railway Company now adopted the policy of using cast iron sleepers wherever possible or is it only in an experimental stage?

*Dr. Horn.*—Cast iron sleeper is standard on this railway.

*President.*—It is only in the last two years that you have been buying so much pig iron. In 1925-26 it was 5,000 to 6,000 tons and now it is nearly 50,000 tons. Have you got any idea of the requirements of the railways per year for, say, the next five years?

*Dr. Horn.*—This year we have rather excess stock. For the next financial year our requirements would be 25 per cent. less.

*President.*—After that, have you any idea of what it would be?

*Dr. Horn.*—Probably an equal quantity in succeeding years.

*President.*—Is there any large renewal programme just now or is it the normal consumption of the railway for cast iron sleepers?

*Dr. Horn.*—This is the normal consumption.

*President.*—So we may take 40,000 to 50,000 tons as the normal requirements of the East Indian Railway for the next five years, can we not?

*Dr. Horn.*—Say 30,000 tons.

*Dr. Matthai.*—Do you notice any difference in quality between imported pig iron and local pig iron, that is to say if you can get imported pig iron at the same price as the local pig iron, would you consider it better to buy imported pig iron?

*Dr. Horn.*—So long as the Indian pig iron is up to the British Standard specification, it makes no difference to us.

*President.*—Have you compared these prices with the prices of imported pig iron?

*Dr. Horn.*—No. What we did was this; we called for tenders in India. We only got two tenders, one from the Indian Iron and Steel Company and another from Mysore. Tatas didn't tender.

*President.*—How do you know whether it is cheaper for you to import pig iron than to buy it locally? Is there any means of ascertaining that?

*Dr. Horn.*—No. In the case of pig iron we don't call for tenders at home.

*President.*—The point we are trying to consider is whether in the price that they quoted you they included this duty or not. The duty would amount to Rs. 7-8-0. What we want to know is, supposing this duty was abolished, would there be a reduction in price?

*Dr. Horn.*—Yes. There are only three works that are quoting.

*President.*—Is there any competition among themselves?

*Mr. Mathias.*—I understood you to say that you never contemplate purchasing imported pig iron; you don't even call for tenders.

*Dr. Horn.*—No.

*Mr. Mathias.*—Do you think that if the duty is taken off, prices will come down.

*Dr. Horn.*—I think it is possible that one of the competing firms might tender lower.

*Dr. Matthai.*—What you are getting the pig iron at now is the price at which imported pig iron can be imported here without duty and therefore supposing the duty was removed, there would not be any increase in the competition from imported pig iron.

*Dr. Horn.*—No.

*Dr. Matthai.*—Practically from your point of view, the removal of duty will not be of any advantage to you as regards price. If Rs. 7-8-0 were added to the import price, the landed price would be somewhere about Rs. 65, whereas local pig iron you are getting at Rs. 65 at destination, so that whether the duty is kept or removed, apparently it makes no difference to you.

*Dr. Horn.*—I don't think the removal of the duty would cheapen the cost of pig iron.

*Mr. Mathias.*—Was there ever a time when you used imported pig iron?

*Dr. Horn.*—We imported some in 1924. We have still got some stock of it at Jamalpur.

*Mr. Mathias.*—Did you tender for large quantities?

*Dr. Horn.*—I can't say, but I will let you know.

*Mr. Mathias.*—There is no particular difficulty in importing, say, 10,000 tons, is there?

*Dr. Horn.*—No difficulty at all.

*Mr. Mathias.*—Supposing the manufacturers of pig iron in India were to charge you a higher price and somebody approached you with an offer of imported pig iron at a lower price, then your policy might change?

*Dr. Horn.*—It may.

*Mr. Mathias.*—So that the limiting factor in determining whether you should purchase pig iron in India or import it would depend on whether the foreign price is lower or not?

*Dr. Horn.*—The policy for the last four or five years have been to call for tenders for pig iron only in India.

*Mr. Mathias.*—If over a series of years the manufacturers of pig iron in India were to charge you a higher price than the sum at which you could import either Continental or English pig iron, your policy might change?

*Dr. Horn.*—Yes. If the price of imported pig iron fell below the price of the locally produced article, then we might put up a case to the Railway Board for considering the question of calling for foreign tenders.

*Mr. Mathias.*—At any rate you would consider it?

*Dr. Horn.*—Yes.

*Mr. Mathias.*—So that the price the local firms quote in their tenders must be the limiting factor.

*Dr. Horn.*—Yes.

*President.*—When you import iron or steel from Great Britain, for larger quantities you get lower prices, don't you?

*Dr. Horn.*—Yes. As regards steel we call for simultaneous tenders in England and in India for all orders above Rs. 10,000 in value.

*President.*—Unless we know exactly how these prices compare with the price of the corresponding quality of imported pig iron, it is very difficult to judge whether you are paying the duty or not. These prices that the Metallurgical Association have given us appear to be somewhat higher than the quotations given in the Iron and Coal Trades Review. On an order for 30,000 tons there may be a very substantial reduction in the import price.

*Dr. Horn.*—Yes.

*President.*—Now this derating scheme which is going to reduce the freights for export of steel and iron might still make some difference.

*Mr. Mathias.*—For large orders the home manufacturers generally reduce their prices by Rs. 2 or 3 a ton. For No. 3 pig iron, for example, if you buy at Rs. 65, for a large order they will probably reduce it to Rs. 63?

*Dr. Horn.*—Yes, the larger the order, the lower the price.

*Mr. Mathias.*—For large orders they would reduce their price by Rs. 3 or Rs. 4 a ton?

*Dr. Horn.*—Yes.

*Dr. Matthai.*—You never had a case of simultaneous tenders for pig iron in the last three or four years?

*Dr. Horn.*—No.

*President.*—Do you call for tenders every year or have you got long term contracts?

*Dr. Horn.*—These are annual contracts for quarterly deliveries.

*Mr. Mathias.*—Actually when you consider the price advantageous, you may stock for two or three years?

*Dr. Horn.*—No.

*Mr. Mathias.*—You said just now that you had in stock a quantity of pig iron which you had imported in 1924?

*Dr. Horn.*—Yes. It was not used because the price was too high, and if manufactured with that pig iron price of output would be increased unnecessarily.

*Mr. Mathias.*—What was it you manufactured from it?

*Dr. Horn.*—Steel castings. We have written down the price of this.

*Mr. Mathias.*—That is Hematite pig iron, is it not?

*Dr. Horn.*—I don't know.

*President.*—You don't require any charcoal pig iron, do you?

*Dr. Horn.*—No, but we can get some of these from Mysore. But the classes of pig iron I have mentioned are the only ones that we are using at present for steel castings.

*President.*—Apparently so far as you are concerned, there is no room for the Mysore charcoal pig iron as such?

*Dr. Horn.*—I don't know. Mysore would have to tender to our specification.

*Mr. Mathias.*—Have you used Mysore pig iron for steel castings?

*Dr. Horn.*—No. We import steel castings in the shape of axle boxes in large quantities.

*President.*—With the abolition of the duty you think that there ought to be a reduction in the price of local pig iron?

*Dr. Horn.*—It depends altogether on whether the price of imported pig, less the duty, is higher than the price of locally produced pig iron.

*Mr. Mathias.*—You were saying just now that you would have to approach the Railway Board for any change of policy.



*Dr. Horn.*—Under the new Stores purchase rules to be brought into force at the end of this year, all tenders have to be in rupees for delivery in this country.

*President.*—That would prevent you from calling for simultaneous tenders?

*Dr. Horn.*—Yes, they will be abolished. Home or foreign firms must tender in rupees for delivery out here.

*Mr. Mathias.*—If you call for tenders from Belgian firms, will you have to approach the Railway Board for sanction?

*Dr. Horn.*—If it is an order for anything more than Rs. 10 lakhs, it will be a matter for the Railway Board.

*President.*—When do you call for tenders for next year?

*Dr. Horn.*—At the end of this month or early next month. We have got several months consumption in stock and we are getting out the figures just now.

*President.*—That would mean that you would advertise here as well as abroad?

*Dr. Horn.*—On the East Indian Railway we call for tenders in the special Stores Bulletins which are issued twice a week. In addition to that we publish tenders over Rs. 10,000 in value in the *Exchange Gazette* and in all the principal papers, *s.g.*, *The Statesman*, *The Englishman* and so on.

*President.*—In Europe do you advertise at all?

*Dr. Horn.*—No. For orders over Rs. 10,000 in value, I send a cable to the Director-General of Stores, London, and ask him to call for tenders at home and abroad and cable out the lowest satisfactory tender.

*President.*—Are you going to do that in the case of pig iron?

*Dr. Horn.*—No.

*President.*—It would be just as well for you to advertise there and find out whether you are getting the benefit or not.

*Dr. Horn.*—There is no harm in doing so.

*President.*—Will you do so and let us have the results?

*Dr. Horn.*—I will cable.

*Mr. Mathias.*—Would that be the price for large quantities?

*Dr. Horn.*—I can cable the Director-General of Stores.

*President.*—Will you let us know what would be the price for a foreign order of say 30,000 tons. That is the form in which we would require the information. Would you let us have that information as soon as you can?

*Dr. Horn.*—Yes, I will cable for it.

### The Eastern Bengal Railway, Calcutta.

Letter dated the 2nd February, 1929.

Reference.—Letter No. 826, dated 19th November, 1928.

Subject.—Pig Iron and Special Steels.

During the last 5 years the quantities of pig iron purchased by this Railway amounted to 3,050 tons.

Our specification is:—

	Per cent.
Combined Carbon . . . . .	0.30
Graphite . . . . .	3.6
Silicon . . . . .	2.5
Manganese . . . . .	1 to 1.25
Phosphorus . . . . .	0.30
Sulphur . . . . .	0.02

Tata's No. 1 pig conforms approximately to this specification.

We have obtained supplies from Tata's, Martin & Co., and Burn & Co.

There have been no complaints as regards quality.

The following special steels have been obtained:—

Description.	Last year's consumption.	Rate per cwt.	Specification.
	Cwt	Rs.	
Steel tool, cast, round, "A" temper.	18	84	Jonas Colver.
Steel tool, cast . . . . .	16	224	18 per cent. Tungsten.
" " " . . . . .	1½	166	22 " "
" " " . . . . .	3	196	14 " "
Steel tool, cast, "C" temper	38	58	"Beard-Shaws C. L. 15 brand."
Steel tool, cast, "C" temper	small	50	25 per cent. Carbon.
Steel tool, cast, "D" temper	84	24	"Jonas Colver."
Steel tool, cast, "E" temper	3	24	" "

### South Indian Railway.

Letter No. W. S. 20/2/1/14, dated the 15th February, 1929.

TARIFF BOARD, INDIA—INFORMATION TO, REGARDING PIG IRON PURCHASE BY RAILWAYS.

In compliance with your letter No. 826, dated 19th November, 1928, I have the honour to enclose the following, giving the information required under items 1 (i) and 2:—

- (a) Statement showing pig iron purchased during 1924-25 to 1927-28.
- (b) Statement showing tool steel of different varieties purchased during 1923-24 to 1927-28.

c) Specifications for tool steels, supplies of which are arranged by our consulting engineers in England.

**NOTE.**—In the case of steel, if any, purchased in India, before taking over the supply, they are subjected to a practical test as to quality.

2. As regards quality, *vide* para. 1 (g) of your letter, pig iron purchased in the local market, is not suitable for small castings, for interlocking works, etc., the Indian pig iron not being as good as the English variety.

Enclosure.

**GENERAL STORES DEPARTMENT.**

*Statement showing particulars of Pig Iron purchased during the 5 years 1923-24 to 1927-28.*

Description of articles.	Source of supply.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.
Pig Iron—		T. C. qr.	T. C. qr.	T. C. qr.	T. C. qr.	T. C. qr.
Imported	Obtained through the Home Board.	...	...	111 8 0	..	319 12 0
Do.	Purchased in India.		70 10 0	222 12 0	300 13 0	442 11 0
Indigenous	Purchased in India.		487 12 0	216 16 0	...	...
	(Mysore Iron Works, Bhadravati, through their agents Messrs. Best & Co., Ld., Madras.)	Not traceable.				
	Purchased in India. (Bengal pig Iron from East Indian Railway, Calcutta.)		...	40 0 0	..	

GENERAL STORES DEPARTMENT.

Statement showing particulars of tool steel, etc., purchased during the 5 years from 1923-24 to 1927-28.

Description of article.	Source of supply.	1923-24.		1924-25.		1925-26.		1926-27.		1927-28.	
		Quantity in lb.	Rate per lb.	Quantity in lb.	Rate per lb.	Quantity in lb.	Rate per lb.	Quantity in lb.	Rate per lb.	Quantity in lb.	Rate per lb.
			Rs. A. P.		Rs. A. P.		Rs. A. P.		Rs. A. P.		Rs. A. P.
1. Steel, tool, double mushet, high speed, 18 per cent. Tungsten, of sizes and sorts.	Home Board .	2,660	2 5 0	...	...	...	...	...	...	2,190	2 1 0
2. Steel, tool, high speed, air hardening, Firth's, 14 per cent. Tungsten, Edgar Allen and Company and New Capital, of sizes and sorts.	Home Board	..	...	...	...	...	...	...	...	110	1 15 0
	Purchased in India.	...	...	...	...	1,580	2 2 0	1,040	1 14 0 to 3 6 0	1,120	1 12 0 to 2 6 0
3. Steel, tool, high speed, annealed, of sizes.	Home Board	2,500	1 15 0	...	...	...	...	330	1 14 0	...	...
	Purchased in India.	...	...	...	...	...	...	60	0 13 0	...	...
4. Steel, tool, high speed, 14 per cent. Tungsten, of sizes.	Home Board .	110	2 2 0	...	...	...	...	...	...	...	...
5. Steel, tool, mushet, high speed, of sizes.	Purchased in India.	...	...	...	...	...	...	...	...	200	1 12 0
6. Steel, cast, tool, ordinary, of sizes and sorts.	Home Board	8,480	0 6 0	...	...	...	...	400	0 6 0	3,250	0 5 0
	Purchased in India.	...	...	...	...	1,380	0 3 0 to 0 8 0	3,700	0 2 0 to 0 5 0	4,370	0 2 0 to 0 3 0

*Specification for high speed, 1 1/2 per cent. Tungsten, double fluted high speed, 18 per cent. Tungsten and new capital brand steel, vide items 1 to 4 of the statement of purchases of tool steel, etc.*

The work required under this specification consists of the manufacture and delivery of the high speed tool steel named in the schedule.

2. The bars of high speed tool steel must be annealed and be as nearly as possible ten feet long, no bar under seven feet long will be accepted unless it is required to make up the specified weight for a particular item.

3. The high speed tool must respond, for the purposes of hardening, to a temperature of 1,200 deg. to 1,320 deg. centigrade and then blown cold. The test tools hereafter described will be subject to this treatment.

4. Bars of tool steel will be selected from the bulk by the Inspector from which at least one test tool, for testing on a steel forging as hereafter described, must be made for every 10 cwts. of each section of tool steel supplied. Should the whole quantity of any section be less than 10 cwts. one tool must be made and tested.

The hardening of the test tools must be done at one operation under the supervision of the Inspector. Every facility must be afforded by the contractor to the Inspector when hardening the tools and testing the steels.

5. All square section tool steel will be tested as turning tools. Any square section larger than one inch square must be forged down to one inch square for test purposes.

Smaller square sections will be tested in a similar manner to the one inch square sections and must execute a proportional amount of work.

6. A wooden model showing the design of tool to be used may be seen at the office of the Consulting Engineers and will be lent to the Contractor for his guidance.

7. The turning tests will be made on an approved forging as hereafter described under the conditions indicated in the table in the schedule, and firms tendering must fill in the guaranteed depth of cut and duration of test in the tabulated statement in the schedule, i.e., the duration of the test proposed, when submitting their tender. The tools after test must be in good cutting condition.

8. No lubricant or cooling agent may be used on the turning tool during the test. The overhand of the tool during the test must be 1 1/2 inches measured from the face of the rest or any packing that may be used to the heel of the tool. No special tool holder or any other support may be used for the tool beyond the face of the rest.

9. All sections of steel other than square will be tested as drills. The drills made for these tests must be of the ordinary plain lip design and must be capable of drilling holes 1 inch in diameter through a steel forging 2 inches thick.

Each drill must drill six holes without being re-ground or re-hardened, and each hole must be drilled in one minute. Water or other lubricant may be used on the drills when being tested.

The steel forging upon which the drilling tests are carried out must have the same chemical analysis and Brinell Hardness as specified below for the forging used for tests for the turning tools.

10. All test tools must be prepared by the contractor under the supervision of the Inspector. All test tools are to be in the Inspector's charge. After the tests, the tools must be sent to the Consulting Engineer's office, carriage paid, labelled and stamped to correspond with the Inspector's report. They will be returned to the Contractors to be packed and sent to India with the bulk of the steel.

11. Turning test tools are to be tested upon a steel forging which must conform to the following chemical analysis and hardness:—

Carbon	.	.	.	.	.	0.60 to 0.65 per cent.
Silicon	.	.	.	.	.	0.10 to 0.20 „ „
Manganese	.	.	.	.	.	0.60 to 0.70 „ „

12. The Brinell Hardness is to be 180 to 200 and will be ascertained in the following manner:—

One inch at each end of the forging will be cut off after it has been normalised. The Brinell Hardness will then be taken at each end of the forging on circular lines, the first two inches less than the diameter of the forging as submitted for test and afterwards on circular lines decreasing in diameter by  $2\frac{1}{4}$  inches. Rings must be cut off for this purpose and Brinelled under the standard Brinell machine. Percussion impressions will not be accepted.

13. The chemical analysis of forgings submitted for test purposes, a copy of which must be furnished by the Contractor to the Inspector for the information of the Consulting Engineers, will be checked by an independent Analyst appointed by the Consulting Engineers, from turnings or drillings taken by the Inspector.

The costs of all testing and analysing is to be included in the prices per cwt. named in the Tender.

The cost of steel required for making tools used for the different tests and of the steel forgings to be used for testing purposes is to be included in the Tender price.

14. Should any of the tests or analyses prove unsatisfactory to the Consulting Engineers additional tests shall be carried out, free of cost beyond the Contract price.

If the second test or analysis is unsatisfactory the whole of the material represented may be rejected, when it shall without delay be replaced by the Contractor free of cost beyond the Contract price.

The Contractors must provide all machinery and other apparatus required for carrying out the specified tests.

15. Every High Speed Steel bar must be stamped near each end with the Maker's name, trade mark, the percentage of Tungsten, the initial S. I. R. and the year of manufacture. A label must also be securely pasted on each bar, at about the centre stating the percentage of tungsten in the steel.

16. The steel bars must be well coated with hot boiled linseed oil of the best quality. When thoroughly dry the tool steel bars must be packed in tongued and grooved cases of  $1\frac{1}{4}$  inches thick deal boarding strengthened by battens pitched at a proper distance along the sides, tops and bottoms, each set of battens being bound with hoop iron  $1\frac{1}{4}$  inches wide by 20 S. W. G. thick. The cases are to have end corner posts outside, bound to the sides and ends with hoop iron. The bars in any one case should be so far as possible of uniform length, and wood distance pieces should be put in where necessary, to prevent the bars from sliding on one another in the cases and damaging the coating of oil and labels. The cases containing the steel must not be fastened down until the Consulting Engineers have passed them and their contents in writing. The contents of any cases must not exceed 10 cwts.

Full instructions as to heating and hardening must be supplied to the Consulting Engineers in triplicate by the Contractor and a set of instructions must also be packed with the Tool Steel.

*Specification for ordinary tool steel—vide item 6 of the statement of purchases of tool steel, etc.*

1. *Work required.*—The work required under this Specification consists of the manufacture and delivery of the Ordinary Carbon Tool Steels named in the Schedule.

2. *Quality of Crucible Steels.*—The tool steel must be genuine crucible steel of the most suitable quality for the manufacture of the tools as named in the Schedule. Not less than 80 per cent. of best Swedish iron is to be used, and sulphur and phosphorus must not exceed .030 per cent. Firms tendering must name in the spaces provided in the Form following the Schedule, the brand of Swedish iron to be used for 80 per cent., the class of material to be employed for the remaining 20 per cent., the analyses of the steels offered, and the extent to which cemented Swedish bar will be used.

3. *Lathe and Machine tool test.*—Specimens of steel for lathe tools are to be made into turning tools, and are to be tested in the lathe on a steel bar not less than 6 inches diameter and which must show an analysis, carbon 0.60 to 0.65 per cent.; silicon 0.04 to 0.07 per cent.; manganese 0.50 to 0.70 per cent. The test is to last 15 minutes with the use of water or other lubricant on the tool. The cutting speed is to be not less than 16 feet per minute; feed, 19 cuts per inch; depth of cut,  $\frac{1}{4}$  inch; not more than  $\frac{1}{4}$  inch of the cutting edge is to be utilised when testing. Tool steels of less than 1 square inch section will only be expected to perform a proportionate amount of the work above specified. Should the testing facilities at the Works not provide for the above named speeds the Contractor must direct attention to the matter when the Contract is placed, and obtain permission for such small variation as may be desirable, but not less than 150 square inches must be removed from the surface of the forging during the test.

4. *Works analyses.*—The Contractor must furnish to the Inspector for the information of the Consulting Engineers copies of the Works analyses of each of the steel forgings or blooms on which the tools are tested.

Similarly the Contractor must furnish a copy of the Works analyses of each kind of crucible steel supplied.

5. *Guarantee.*—The Contractor must furnish the Consulting Engineers with a written guarantee on completion of the Contract, when rendering his invoice that the steels supplied are of the most suitable qualities for the manufacture of the tools for which it is required, as named in the Schedule.

6. *Marking of Bars.*—Each crucible steel bar must be stamped near each end with the Maker's name, the letters S. I. R., the words "Crucible Steel", and with the names of the tools for which the steel is supplied. A label must also be securely pasted on each bar at about the centre stating the tools named in the Schedule for which the steel is suitable.

7. *Oiling and packing.*—The steel bars must be well coated with hot boiled linseed oil of the best quality, and packed in tongued and grooved cases of  $1\frac{1}{2}$  inches thick deal boarding strengthened by battens pitched at a proper distance along the sides, tops and bottoms, each set of battens being bound with hoop iron  $1\frac{1}{2}$  inch wide by 20 S. W. G. thick. The cases are to have end corner posts outside, bound to the sides and ends with hoop iron. The bars in any one case should be so far as possible of uniform length, and wood distance pieces should be put in where necessary, to prevent the bars from sliding. The contents of any case must not exceed 10 cwts.

### **Bengal and North Western Railway Company, Limited.**

*Letter No. 15892, dated the 18th March, 1929.*

With reference to your letter No. 826, dated the 19th November, 1928, I beg to furnish the following information as desired in your above:—

1. (i) The total quantity of pig iron purchased by the Bengal and North Western Railway, during the last five years, i.e., from January, 1924 to December, 1928 were:—Ton 1,090-19-1-0.

(ii) Good quality of pig iron was received hence no complaint made.

2. The following steel tools were used by this Railway during the last five years:—

Quality.	Quantity.	Average rate.	Per.
	T. C. Q. lb. oz.	Rs. s. p.	
Steel tool round ordinary . . . . .	3 1 0 15 0	36 3 2	cwt.
„ „ square air hardening . . . . .	5 18 3 2 4	143 13 8	„
„ „ octagon (water hardening) . . . . .	8 4 2 13 0	20 2 0	„
„ „ flat air hardening . . . . .	0 29 0 0 0	209 1 11	„
„ „ round air hardening . . . . .	0 0 1 27 0	2 4 0	lb.
„ „ „ longstrand . . . . .	0 7 3 23 0	100 14 7	cwt.
„ „ „ pnusnap Firth . . . . .	0 0 0 17 0	23 0 1	„
„ „ „ „ Poldi . . . . .	0 2 0 13 0	15 4 0	„
„ „ „ Die Steel . . . . .	0 0 1 18 12	40 4 0	„
„ „ square ordinary . . . . .	1 5 1 9 0	34 10 3	„
„ „ „ high speed . . . . .	1 1 3 20 0	2 2 6	lb.
„ „ flat cast . . . . .	1 1 0 18 8	1 1 0	„
„ „ high speed vulcan . . . . .	0 1 0 11 8	1 15 6	„
„ „ round extra brand . . . . .	0 2 0 12 0	30 12 0	cwt.
„ Cyclone high speed . . . . .	0 0 0 22 0	16 9 0	„
„ tool cast hexagon . . . . .	0 4 2 0 0	16 4 0	„
„ „ octagon cast air hardening . . . . .	0 8 1 5 0	16 14 0	„

**His Exalted Highness the Nizam's Guaranteed State Railways  
Company, Limited.**

*Letter No. 25417, dated the 18th April, 1929.*

In reply to your letter No. 826, dated 19th November, 1928, I have the honour to state that during the last five years approximately 500 tons of pig iron have been purchased by this Railway, the source of supply being the Tata Iron and Steel Company and the Mysore Iron Works. We have had many occasions to make complaints about the quality. With regard to the tool, alloy and special steel made use of by this Railway, I enclose a statement showing the quantities and the price during the period 1924 to 1928.



## Enclosure.

Articles.	Source of supply.	Quantity purchased.	Rates per lb.
		Cwts.	Rs. A. P.
Steel tool carbon flat . . . .	Edgar Allen & Co. (Home Indent).	12	0 5 5
Do. round . . . . .	Do. do.	7	1 1 0
Steel tool round brand No. 212 Foldi.	Foldi Steel Works, Calcutta .	2	2 2 0
Tool steel flat . . . . .	Armstrong Whitworth & Co., Vickers Haeva & Co. and Ibbotson & Co. (Home Indents).	28	1 14 3
Die steel carbon . . . . .	Edgar Allen & Co. (Home Indent).	14	0 5 5
Tool steel round . . . . .	Local purchase . . . . .	5	0 9 5
Do. square . . . . .	Home Indent . . . . .	5	2 2 4

## North Western Railway.

Letter No. 197-S/216, dated the 10th May, 1929.

With reference to your letter No. 826 of 19th November, 1928, I beg to give below the information called for in your above:—

(1) 11,200 tons of pig iron were purchased by this Railway from Messrs. Tata Steel Company during the last five years.

(2) We have had no occasion to make any complaint.

As regards item 2 (2) I would inform you that the alloy steel has never been purchased by this Railway.

A statement showing particulars regarding special tool steel is enclosed. A copy of drawing No. 460, referred to in the statement, is also enclosed.

## Enclosure.

Class and O. L. No.	Description of stores.	Specification to drawing No.	One year's consumption.	Rate per cwt.
				Rs. A. P.
G.B. 4-178	Steel round special for milling taps, 1"	460	0 1 13	65 0 0
	Do. do. 3/4"	460	0 1 17	65 0 0
	Do. do. 1"	460	0 3 1	65 0 0
	Do. do. 1 1/4"	460	8 1 26	65 0 0
	Do. do. 1 1/2"	460	6 0 6	65 0 0
	Do. do. 2 1/4"	460	...	65 0 0

Class and O. L. No.	Description of stores.	Specification to drawing No.	One year's consumption.	Rate per cwt.
				Rs. A. P.
G.B. 4-179B.	Steel tool carbon special (shear steel flat), 8' x 1½".	460	8 3 18	70 0 0
G.B. 4-179E.	Steel tool carbon special pneumatic round, 1½".	460	...	29 6 0
	Steel tool carbon special pneumatic round, 1½".	460	...	29 6 0
	Steel tool carbon special pneumatic round, 2".	460	9 3 0	29 6 0
	Steel tool carbon special pneumatic round, 2½".	460	...	29 6 0
	Steel tool carbon special pneumatic round, 2½".	460	11 2 0	29 6 0
	Steel tool special carbon crucible and plain pneumatic round, 2½".	460	8 0 23	65 0 0
G.B. 4-179H.	Steel tool carbon special chisel oct., 1½".	460	0 1 23	53 7 0
G.B. 4-179J.	Steel tool special carbon crucible and plain round, 1".	460	...	27 6 0
	Steel tool special carbon crucible and plain round, 1".	460	...	27 6 0
	Steel tool special carbon crucible and plain round, 1½".	460	...	27 6 0
	Steel tool special carbon crucible and plain round, 1½".	460	...	27 6 0
	Steel tool special carbon crucible and plain round, 1½".	460	...	27 6 0
	Steel tool special carbon crucible and plain round, 1½".	460	1 0 0	27 6 0
	Steel tool special carbon crucible and plain round, 2".	460	...	27 6 0
	Steel tool special carbon crucible and plain round, 2½".	460	...	27 6 0
	Steel tool special carbon crucible and plain round, 2½".	460	2 0 8	27 6 0
	Steel tool special carbon crucible and plain round, 2½".	460	...	27 6 0
	Steel tool special carbon crucible and plain round, 3".	460	...	27 6 0