

Revenue (189 9) Department.

MISCELLANEOUS SERIES.

G.O., No. 463

DATED 31st January 99

[Despatch Abstract.]

Supp. of sleepers to Railways in the Presidency
by the Forest Dept.
Supp. of sleepers for information Correspondence regarding the

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
Cuo 982/99.							
= Sp. 673 of 15-2-98							

Government (1899) of Malacca. PUBLIC WORKS.

Current No 481

Recd. 19/1

Regd. 20/1

1899.

Enclosures

Spare copies

G.O., No. 53 Ry., 11th January 1899.

JANUARY.



P.O. No. 12463 of 31st Jan 99

Recorded

30/1/99

Supply of Sleepers

Note a copy of the pro has been sent to the Bd direct.

Ordered that the correspondence regarding the -- to railways in the Presidency by the Forest Department, be forwarded to the officers concerned for information.

20/1/99

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following papers:—

Proceedings of the Board of Revenue (Land Revenue), Forest No. 427, dated 6th October 1898.

Read the following papers:—

From—The Conservator of Forests, Southern Circle.

Dated—5th September 1898, No. 798.

ABSTRACT.—Submitting remarks on Board's Proceedings, Forest No. 301, dated 21st July 1898, regarding the supply of sleepers for the Calicut-Cannanore Railway.

G.O., No. 1141 Ry., dated 16th September 1898.

ABSTRACT.—Informing the Board of Revenue of the number of sleepers which are likely to be required annually for renewals on the standard and metre-gauge railways in the Madras Presidency, and requesting it to report what steps it proposes to take for supplying them.

Resolution—Forest No. 427, dated 6th October 1898.

In the Government Order read above, the Board is directed to report as early as possible, for the information of Government, what steps it is proposed to take in the matter of the direct supply of sleepers to railways in this Presidency.

2. Certain proposals were submitted in Board's Proceedings, No. 301, dated 21st July 1898, but the figures given in the Government Order now read show that there has been a misunderstanding as regards the size of the sleepers required for the Calicut-Cannanore Railway.

3. The letter from the Agent, Madras Railway, forwarded with G.O., No. 544 Ry., dated 7th April 1898, gave quotations for two sizes of sleepers, and the Board assumed that the smaller of these, viz., a sleeper of $3\frac{1}{2}$ cubic feet, was that which is required for the Calicut-Cannanore Railway and based its proposals accordingly, but from the enclosure to G.O., No. 1141 Ry., dated 16th September 1898, it would appear that the size required is either that used by the South Indian Railway, viz., $6' 6'' \times 9'' \times 4\frac{1}{2}''$ or that proposed for the Shoranur-Cochin Railway, viz., $6' \times 8'' \times 4\frac{1}{2}''$. The Board will require to have definite information on the point before commencing work.

4. It is observed that the Madras and South Indian Railways pay different prices per sleeper according to the wood of which it is made, and if necessary differential prices can be quoted, after further enquiry, with reference to the wood used and the locality from which it is supplied, but the Board would prefer an all-round rate of Rs. 3-4-0 for a sleeper $6' 6'' \times 9'' \times 4\frac{1}{2}''$ which, it is observed, is the rate that has been paid by the South Indian Railway for Irul sleepers. The price per sleeper $6' \times 8'' \times 4\frac{1}{2}''$ would be Rs. 2-12-0. Delivery would be made at Podanur from Coimbatore, at Kallai from South Malabar, at Calicut and Tellicherry from North Malabar, while those from South Canara would be delivered at any port in Malabar which might be found convenient for the Railway Company.

5. In its Proceedings of the 21st July 1898, No. 301, paragraph 7, the Board offered to supply all the sleepers required for the Calicut-Cannanore Railway if all the timbers mentioned by it were accepted and the road to the Pollachi Upper Anamalai forest were pushed on with. The present Acting Conservator of Forests, Mr. Gass, in consultation with whom the present Proceedings are written and who is also permanent District Forest-officer, Coimbatore, considers that we do not yet know enough of the Pollachi Upper Anamalai forests to justify us in offering to make any supply from there owing to the long carriage, and the difficulty of converting the prevailing timber, viz., *Mesua ferrea* or *speciosa*; he also considers that the capabilities of the Lower Anamalai forests have been overestimated. The smaller size of the sleeper required, however, makes it unnecessary for the Board to withdraw its proposal to supply 136,000 sleepers within three years using only the woods which it now appears are already approved by the Madras and South Indian Railways, viz., Karimaradu (*Terminalia tomentosa*), Irul (*Xylia dolabriformis*) and Irumbogam (*Hopea parviflora*). Further information from North Malabar even enables it to raise its offer to 200,000 within three years, and if the smaller sleeper be used the number would be 250,000. This does not include the demand for the Tinnevely-Quilon Railway. This railway was not mentioned in the former orders of Government, and consequently full enquiries have not yet been made as to the capabilities of the Tinnevely forests. A further communication will be submitted on the point, as well as with regard to experiments which are now being made with other kinds of wood in communication with the officers of the Madras Railway Company.

6. It is also proposed to thoroughly investigate the capabilities of the Pollachi Upper Anamalai forests. A saw-mill and wire ropeway have just been successfully installed in the Lower Anamalais in which a tramway has been in work for years, and if similar arrangements on a larger scale can be made for the exploitation of the more extensive and more fully stocked forests of the Upper Anamalais, the Board sees no reason to doubt that it will be in a position largely to increase its contribution towards meeting the very large demand for sleepers which has arisen in connection with the extension of railway construction in the Presidency.

7. The most important timber in the Upper Anamalai forests being *Mesua ferrea*, the Board would be glad to be informed at the earliest possible date whether sleepers of that wood would be accepted. It does not appear that any of them has been used by the Madras or South Indian Railways, but Gamble, at page 27 of his Manual of Indian Timbers, states that it has been found to answer for sleepers equally well with Pynkadu.

G.O., No. 772, Revenue, dated 13th December 1898.

Read the following papers:—

Proceedings of the Board of Revenue (Land Revenue), Forest, No. 301, dated 21st July 1898.

ABSTRACT.—Submitting to Government, with Board's remarks, Mr. Brasier's proposals regarding the supply of railway sleepers for the Calicut-Cannanore Railway.

Proceedings of the Board of Revenue (Land Revenue), Forest No. 427, dated 6th October 1898, regarding the supply of sleepers to railways.

G.O., No. 1311 Ry., dated 21st October 1898.

Order—No. 772, Revenue, dated 13th December 1898.

Recorded. The Board of Revenue should do all they can to develop the market for railway sleepers.

2. The question of the alignment of the Anamalai ghât road is under the consideration of the Government.

MESUA FERREA.

Vernacular names: *Nagesar*, Bengali; *Nahor*, Assamese; *Nangal*, Tamil; *Naga-Kesara*, Telugu.

A large evergreen tree. Heartwood dark red, extremely hard. Pores moderate-sized, often in groups, scanty, often filled with yellow resin. Medullary rays extremely fine, uniform, equidistant, very numerous. Numerous fine, many, concentric lines of light-coloured tissue.

Eastern Bengal from the Monas eastward (though traces of its having formerly been found west of that river occur sometimes in the names of places, e.g., Nageshwarbari, or Naksarbari, a town in the Sikkim Terai on the Nepal frontier), Assam, South India, Ceylon, Burma and the Andamans, often cultivated.

The weight and transverse strength have been determined by the following experiments:—

A. Mendis	—	Ceylon No. 59, with bars 2' x 1" x 1" ...	... weight, 72 lbs. P = 994
Brandis	—	Burma No. 18, 1862 ...	... " 69 " P = ...
Bennett	—	Andamans No. 4, 1872 ...	... " 70 " P = 1,053
Smythies	—	Assam (4 specimens) 1878 ...	... " 67.5 " ...
	—	Kanara (1 specimen) " ...	... " 62 " ...
	—	Burma (6 specimens) " ...	... " 70 " ...

Several of our specimens, however, reached 74 to 76 lbs. per cubic foot in weight. It is very durable. It has been found to answer for sleepers equally well with Pynkadu, but the cost of cutting the hard wood, its weight, and the freight from the Tenasserim forests to Calcutta prevent its being much used, as the total cost is scarcely covered by the price (Rs. 5) per broad-gauge sleeper. It is used for building, for bridges, gunstocks and tool handles; but its more general use is prevented by its great hardness, weight and the difficulty of working it. In Ceylon an oil is obtained from the nut, and the tree is often planted for the sake of its handsome flowers.

Note by the Consulting Engineer for Railways, Madras.

In Assam *Nahor* (*Mesua ferrea*) is known to be an excellent sleeper timber.

Read the following papers:—

G.O., No. 1141 Ry., dated 16th September 1898.

Proceedings of the Board of Revenue (Land Revenue), Forest No. 427, dated 6th October 1898.

Order—No. 1311 Ry., dated 21st October 1898.

A copy of the Board's Resolution, together with a copy of the description of *Mesua ferrea* given in page 27 of Mr. Gamble's book, will be forwarded to the Madras, South Indian, and East Coast Railways, with an enquiry whether they will be prepared to accept sleepers of the timber for extensions and renewals, and with a request that they will specify the size of sleepers, standard or metre gauge, which they would be prepared to take. It is noted that in the Government of India standard dimensions the following sizes are recommended, viz., for broad gauge 9' 6" x 9" x 5", with, as a minimum, 8' 11" x 8" x 5", and for metre gauge 6' 0" x 7" x 4½" with, as a minimum, 5' 9" x 6" x 4".

Indian Railway.

Way.

C. 3204 A./2362.

have to take, on the sanction of the Madura-Pamban Railway for providing the permanent-way material. The Madura-district practically void of building material except at the lay down a service line of railway as early as possible. Shadbolt provides for 50 lb. rails on cast iron pot sleepers, but for a temporary purpose. I recommend strongly that the have in use with our 50 lb. bull-headed rail be adopted as the same with the on wooden sleepers; taking the length of line to be adopted as the same with the branch as the alignment of Mr. Shadbolt, we shall require 225,000 sleepers. It will so expect to be able to get this quantity of sleepers locally, and I shall be obliged by ng the matter to the Consulting Engineer requesting him to obtain information as to overnment Forest Department can do. tech in the supply of sleepers to the Bezwada-Madras Railway points to the necessity arrangement. The size of the sleepers required is 6' 6" x 9" x 4½".

The Consulting Engineer for Railways, Madras.
e Secretary, Board of Revenue (Land Revenue—Forests).
Madras, 19th November 1898, No. 3158.

th reference to Board of Revenue Proceedings, Forest No. 427, dated 6th 1898, and to Railway Department's Order thereon, No. 1141 Ry., dated 16th 1898, a copy of which will doubtless have reached the Board through the artment, I have the honour to inform you that the Agent, South Indian apany, has enquired whether the Forest Department will be able to provide, in full, the 225,000 sleepers required for the Madura-Pamban Railway. expected that funds for that railway will be available in April 1899, and thing to be done will be to lay a surface line down from both ends as s possible so that the provision of sleepers is an urgent matter. If not n the Presidency, the price of them must go elsewhere, as the construction ough surface line must be pushed forward.

Agent, South Indian Railway.
onsulting Engineer for Railways, Madras.
chinopoly, 28th November 1898, No. 1072.

reference to G.O., No. 1311 Ry., dated 21st October 1898, I have the rward copies of the correspondence which has passed between the Chief and the Acting Conservator of Forests, Southern Circle. The size of sleeper d require is 6' 6" x 9" x 4½".

From—The Chief Engineer, South Indian Railway.
To—The Conservator of Forests, Southern Circle.
Dated—3rd November 1898, No. S. 8403.

With reference to Board of Revenue Proceedings, No. 100 of 1898, copy of which has been forwarded to this office for information.

I shall be glad to know whether you can forward sample description of timbers mentioned therein, viz. :—

1. *Mesua ferrea*.
2. Karimaradu.
3. Irul.

ENCLOSURE No. 3.

From—The Conservator of Forests, Southern Circle.
To—The Chief Engineer, South Indian Railway.
Dated—Coimbatore, 15th November 1898, No. 1459.

In reply to your letter No. S. 8403, dated 3rd November 1898, I have the honour to inform you that I am issuing the necessary instructions to prepare 10 sleepers of each of the 4 timber named by you and I am adding two other kinds—*Anogeissus latifolia* (Vekk) and *Vitex Altissima* (Maila) both of which I hope may prove to be suitable timbers.

2. It will take some little time to get these sleepers ready and I shall address you on the subject and state the station at which they will be delivered.

From—The Consulting Engineer for Railways, Madras.
To—The Agent, South Indian Railway.
Dated—Madras, 3rd December 1898, No. 3320.

I have the honour to acknowledge the receipt of your letter No. 1072, dated 28th November 1898 and with reference to its enclosures to offer the following remarks, for the information of your Chief Engineer.

2. The Madras Forest Department have not heretofore laid themselves out in doing a sleeper business. Government has not chosen that they should have been otherwise employed.

3. Lately however Government has been enquiring about the advantages of organizing and equipping the Forest Department as to enable them to get on with the business of sleeper supply to railways. This explains to you the object of my enquiries as to number of sleepers required for renewals, species of wood available

...by addressing the
...is very highly valued for
...of planters' bungalows, travellers' bungalows,
...four or five feet in the ground, frequently in damp
...usually considered to have a life, in such a situation, of 20 to 25

Consulting Engineer for Railways, dated 3rd December 1898, No. 3320/A.
Forwarded to the Agent and Manager, Madras Railway for favour of communication to his Chief Engineer.

The Agent and Manager, Madras Railway.
Consulting Engineer for Railways, Madras.
Madras, 12th December 1898, No. 10661/1194.

With reference to G.O., No. 1311 Ry., dated 21st October 1898, I have the honour to enclose for your information copy of a letter from the Company's Chief Engineer No. E. 485/1642, dated 9th instant and shall be glad if it can be arranged for the Company to be supplied with the sample sleepers referred to in paragraph 3.

ENCLOSURE.

Chief Engineer, Madras Railway.
Agent and Manager, Madras Railway.
Madras, 9th December 1898, No. E. 485/1642.

In your endorsement No. 10661 of 22nd October 1898, on G.O., No. 1141 Ry., dated 19th September 1898, in which the Consulting Engineer asks whether this company will be prepared to accept sleepers of *Mesua Ferrea* timber for renewals and for use on the Calicut extension, and to specify the size of sleepers required for standard or metre-gauge, I desire to point out that it is essential that sleepers to be of any practical value must be of timber which has been seasoned for at least a year. If therefore sleepers of this timber, when supplied, can be supplied at more favourable rates than those now obtaining on the West Coast, it might be adopted by this Company for renewals, and on the Calicut-Balliapattam

It should be clearly understood that sleepers supplied by the Forest Department be subject to the conditions of ordinary contracts, and should be in accordance with our specification, and that the officers of this department, subject to rejection if considered unfit for use, and not for any other reason, and that the officers of this department should be sole judges in this respect.

I will be much obliged if the Forest Department will be good enough to send to this company a sleeper 10' x 10" x 5" of *Mesua Ferrea*, Karimaradu (*Terminalia tomentosa*) and *Hylocarpa* and desire to know if they could also deliver at Podanur 10 bridge sleepers 12" x 7", 10 crossing sleepers 16' x 12" x 6", and 30 point sleepers 10' x 6" of *Mesua Ferrea* for insertion in the line on trial.

I understand that this department cannot pledge itself to take a large supply of sleepers from the Forest Department without first seeing the quality they propose giving and

From—The Chief Engineer

302	do.	10' x 7" x 6"	
362	do.	12' x 9" x 6"	
121	do.	10' x 12" x 8"	for major
2,000	do.	6' x 8" x 6"	for minor
700	do.	12' x 7" x 6"	for level crossings.

(3) Metre-gauge conversion from Mettupalaiyam to Calicut—
3,613 sleepers 12' x 12" x 8".

6. If however the proposed conversion from Mettupalaiyam to Calicut from metre gauge is not carried out and the standard gauge is adopted on Calicut-Ballia sion, the probable quantity and the actual dimensions of sleepers required will be as

(1) Annual renewals on Madras Railway—

2,024	sleepers	10' x 10" x 5"	for points and crossings.
576	do.	12' x 12" x 7"	for bridges.
622	do.	16' x 12" x 6"	for crossings.

(2) Extension from Calicut to Ballapatam standard gauge.

2,132	sleepers	10' x 10" x 5"	for points, crossings and bridges.
1,633	do.	10' x 12" x 7"	for bridges.
250	do.	15½' x 12" x 7"	
647	do.	16' x 12" x 6"	for crossings.

7. In connection with this subject, I may state that while in charge of the 3rd south-west line, and 2nd district I frequently tried to induce Forest officers to supply sleepers, without any result and may add that this department would be very pleased to obtain from the Forest Department all sleepers required of good quality, cut from well seasoned timber, sleepers cut from green timber are useless as they crack and

EXTRACT FROM INDIAN ENGINEERING, DATED 1ST OCTOBER 1898.

The new means for the preservation of timber.

Letter dated 9th September 1898 from the Manager, Haskin Wood Vulcanizing Co., Dean's Yard, London, S.W.

Our attention has been called to an article in your issue of 11th June, bearing referring at some length to our process. Without encroaching too much upon your might remark, for the benefit of your readers, that our works at Millwall (London) are full working order for some time, and that we have treated large quantities of sleepers for English Railway Companies to their entire satisfaction, and at the present time have contracts for Haskinized sleepers on hand. A large consignment of Haskinized sleepers has also been shipped to South America.

Considerable quantities of Haskinized wood paving-blocks have been, and are being, laid in the principal streets of London, and various large provincial towns in all parts of the country during the past month or two.

The process is much cheaper and far more effective than creosoting, as, besides, it hardens, indurates and strengthens the timber, and renders the timber serviceable as the heartwood.

Pieces of Haskinized wood that have been sent out to India and placed in the open have absolutely withstood the ravages of these little destructors, while untreated wood which accompanied them have been thoroughly honeycombed.

The process is also suitable for the preservation of timbers for bridge-work, for decking, platforms, etc., and being inodorous may also be used to considerable advantage in indoor work.

We shall be most happy to give any of your correspondents, or readers, any further information they may desire.

Indian railways is a large and difficult problem, and so far as I am concerned, your process, would, if "Haskinized," be quite suitable for the purpose. It is scarcely necessary for me to explain to you that to send timber to India to be treated in order to re-ship it to India would, commercially, be quite

It suggests itself therefore that your Directors might perhaps see their way of entering into a correspondence having for its object the establishment of one or more central places within reach of the larger Southern Indian forests. Such works should be managed by the Government Forest Department, or some arrangement for paying you a royalty, or by the Railway Companies, or some agency through the medium possibly of one or other of the large firms of mercantile Engineers, would be a matter for consideration and settlement. What the State Railways and the Companies' Railways might be glad, in my official capacity, to enter into a correspondence with you on the subject, laying your views before the Railway Engineers and before the heads of the Forest Department.

The Secretary, Haskin Wood Vulcanizing Company, Limited.
Consulting Engineer for Railways, Madras.
Dean's Yard, Westminster Abbey, S.W., 25th November 1898.

Directors have now considered your letter and memoranda of the 17th and instruct me to reply as follows.

I think a plant say half the size of that now working at Millwall would meet your requirements, and they estimate the cost of such a plant, at Liverpool, will be about £12,000. Such an installation could be arranged so that you might consider desirable and each installation should enable you to treat say, 450 standard size sleepers per day.

For assenting to your installation of such a plant in India would be the sum of £10,000 paid down so soon as our negotiations are completed, and a royalty of 3d. per cubic foot of ordinary gauge and 2d. per sleeper of metre gauge and 1d. per cubic foot of miscellaneous timber that might be treated in the vessels.

If the Government wish to pay a capital sum down in the first instance in lieu of the proposed royalty this would be a matter for negotiation.

It should be stipulated that the apparatus would only be employed for the treatment of sleepers supplied by the Forest Department for the use of the railways or other departments, and the company would also specially stipulate that the plant should be made and supplied by their sole licensees, Galloways, who have constructed the whole of the machinery at the Millwall works, and the satisfaction and which machinery can be seen at any time by any person authorized by the Government.

A short specification of plant half the size of that at Millwall.

There are unlimited quantities of timber that I have read of

From—The Chief Engineer, South Indian Railway.
allow of expansion and contraction taking place.

100 trolleys as before mentioned, to be formed of
fitted with four wheels suitable for running upon the rails.

1 horizontal non-condensing air compressing engine with air cylinder having
18" and a stroke of 2' 6," and with steam cylinder of suitable dimensions; this engine
complete in every way and of the most substantial design in every detail.

1 Horizontal non-condensing air circulating engine of the proper size and strength
2 Patent Galloway boilers each 28 feet long by 7 feet diameter, made of best
steel plates with complete set of fittings, valves, &c.

The whole of the pipes and valves for actuating the vessels, machinery, &c.
described including steam, feed, exhaust, and air circulating pipes with feed pumps, &c.
boilers, air receivers, heaters and coolers as required, all of the best material and
throughout, delivered f.o.b. steamer in Manchester.

ORDER—No. 53 Ry., dated 11th January 1899.

The papers read above will be communicated to the Board of Revenue
Agents, Madras and South Indian Railways, to the Manager, East Coast Railway
to the Agent and Manager, His Highness the Nizam's Guaranteed State Railway
information.

In giving effect to the order of Government, No. 772, Revenue, dated
December 1898, the Board of Revenue should either correspond directly with
various Railway Administrations or should put the Forest Department in touch
with them.

A copy of these Proceedings and of previous Proceedings on the same subject
will be communicated by the Consulting Engineer to the Director of
Construction.

(True Extract.)

[Signature]
Under Secretary

To the Consulting Engineer for Railways.

" Agent and Manager, Madras Railway.

" " His Highness the Nizam's Guaranteed State Railway.

" Agent, South Indian Railway.

" Manager, East Coast Railway.

" Revenue Department.

" Board of Revenue.

Editors' Table.

Exd. A. Rungasawmy Aiyangar.

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