Public Works (1899) Department.

RAILWAY BRANCH.

G.O., No. 1405. Ry

DATED 6th Dec. 1899

[Despatch Abstract.]

Infringement of Standard Dimensions

Comng: the Senior Govt Insp. of Ry,
a memorandum from the Govt of India forwarding
a copy of its letter to the Govt of Burma stating
that its circular No 4 Ry of 1899 regarding the
power of sanction to — was not intended
to take away the powers conferred in cir No 9 Ry
of 1896 as regards infringement of standard
weights for rolling stock

Indexed.

[P. W. Ry. 600-1-12-98]

BACK PAPERS.

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

FURTHER PAPERS.

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

Public Works (1899) Department.

RAILWAY BRANCH.

CURRENT No. 1487

From Govt of India

Order No. 1405. Ry dated 6.12.99.

Communicated to
the Senior Govt. Inspector
of Railways for information
& guidance with reference
to Govt No. 1268 Ry of 25.2.97
& No 773 Ry of 13.7.97.

No. 2193 R.C.

Dated 23-11-99

Received

Registered 29-11-99

Enclosures

Spare copies.

Use 2.12.99

D.R.

SUBJECT.

Infringements of Standard Dimensions

Forwarding copy of their letter to the Govt of Burma stating that their Cir. No 4 Ry of 99 re: powers of Sanction to —— was not intended to take away the powers conferred in Cir. No 9 Ry of 1896 as regards infringements of Standard Weights for Rolling Stock.

Copy to ER
AM
A.

Despatched on 7.12.99

BACK PAPERS.

No.	Date.

FURTHER PAPERS.

No.	Date.

Copy of letter No.2100 R.C., dated 6th November 1899, from the Secretary to the Government of India, Public Works Department, to the Secretary to the Government of Burma, Public Works Department, Railway Branch.

I am directed to acknowledge the receipt of your letter No.1714-1 S.R., dated 12th October 1899 enquiring if it is 57 intended that para.2 of the Resolution in P.W.D.Cir.No.IV Ry., dated 19th June 1899 delegating certain powers to Consulting Engineers for Railways to sanction infringements of standard dimensions prescribed for all 5'6" gauge and metre gauge Railways in India, should supersede para.4 of the Resolution in Public Works Department Circular No.9 Railway, dated 25th November 1896, so far as they relate to maximum loads for ~~xxx~~ locomotive-axles. 52

2. In reply, I am to say that Public Works Department Circular No.IV Railway, dated 19th June 1899 was not intended to take away the power conferred in para.4 of Public Works 57 Department Circular No.9 Railway, dated 25th November 1896, as 52 regards infringements within 5 per cent of standard weights for rolling stock.

S.S.S.

All communications should be addressed to the Secretary.

No. 2193 R.C.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

RAILWAY CONSTRUCTION.

SECRETARY TO
RECEIVED
29 NOV. 1899
C. No. 1485
GOVT. OF MADRAS RYS.

Calcutta, the 23rd November 1899.

The under-mentioned paper is forwarded to the Secretary to the Government of Madras, Public Works Department, Railway Branch, for information and guidance with reference to Government of India, P.W.D. Circular No. IV Railway, dated 19th June 1899.

By Order,

C. J. C.
Under Secretary.

Document referred to :-

Copy of P.W.D. letter No. 2100 R.C., dated 6th November 1899 to the Secy. to the Govt. of Burma, P.W.D., Railway Branch.

Indian Railways.

Infringements of Standard Dimensions.

States that Cir. No. IV Ry., of 1899 was not intended to take away the power conferred in Cir. No. 9 Ry. of 1896 as regards infringements of Standard Weights for Rolling Stock.

S.S.S.

No. 2089 R. S.

FROM

THE DIRECTOR OF RAILWAY CONSTRUCTION.

RAILWAY STORES.

SECRETARY TO
RECEIVED
2 DEC. 1899
C. No. 5203
GOVT. OF MADRAS RYS.

To

*The Secretary to the Government of Madras, Public Works Department, Railway Branch.
*The Secretary to the Government of Bombay, Public Works Department, Railway Branch.
*The Secretary to the Government of Bengal, Public Works Department.
*The Secretary to the Government of Burma, Public Works Department, Railway Branch.
*The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow and Assam.

†The Manager, North Western Railway.
†The Manager, Oudh and Rohilkhand Railway.
†The Manager, Eastern Bengal State Railway.
†The Manager, East Coast Railway.
†The Engineer-in-Chief, Hardwar-Dehra Railway.
†The Engineer-in-Chief, Indus Bridge Works and British Section, Shadipalli-Balotra Railway.
†The Engineer-in-Chief, Godavari Bridge.
†The Engineer-in-Chief, Ghaziabad-Moradabad Railway.
†The Engineer-in-Chief, Ludhiana-Dhuri-Jakhal Railway.
†The Port Store-keeper, State Railway Department, Calcutta.

SIR,

Calcutta, the 9th November 1899.

S.46.

With reference to *Govt. of India, P. W. D., Circular letter No. 529 R. S., dated 13th April 1899 / †this Office Circular No. 4, dated 21st March 1899,

I have the honour to forward, for information and guidance, a statement compiled in the Office of the Inspector General of Forests, which contains the particulars promised by that officer in the correspondence forming an enclosure to the Circular above quoted regarding the supply of railway sleepers by the Forest Department.

2. It should be clearly understood that the Inspector General of Forests has no authority to sell sleepers. All applications should be made to the different Conservators of Forests mentioned in the accompanying list, who alone, under orders of Local Governments and Administrations, dispose of available wood.

I have the honour to be,

SIR,

Your most obedient Servant,

Ghatwood Lt. R.E.

for Director.

Documents accompanying.

Copy of statement and list referred to.

G. I. C. P. O.—No. 530 P. W. D.—18-11-99.—370—T. C. S.

To The Secy: to the Govt of Madras
Public Works Department
Railway Branch.
With 50 spare copies (sent per Packet (R) Post)

Statement containing information regarding the supply of railway sleepers by the Forest Department.

Province.	Names of Forest Divisions and Civil Districts.			Names of timber depôts belonging to the Forest Department.	Names of central places where timber and sleepers might, if necessary, be arranged for.	Distances of depôts, or central places, from the nearest railway station.	Cost of carriage, per cubic foot, from depôts or central places to railway station.	Species of timber available.	Probable annual supply available of wood fit for sleepers.	Probable prices of broad and narrow-gauge sleepers.	Remarks.
	Civil District.	Forest Division.	Address of Divisional Forest Officer.								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Singhbhum ...	Singhbhum ...	Chaibassa	Goilkora ...	.....	½ mile ...	2 pies ...	Sál	3,000 B. G. sleepers	Rs. 4-2-0 per B. G. and Rs. 3 per N. G. sleeper.	These forests have just supplied 203,964 B. G. sál sleepers delivered at stations on the Bengal-Nagpur Railway to the Rai Bareilly-Benares Railway at Rs. 4-2-0 each.
				Samta ...	.....	3½ miles ...	1 anna ...	Sál	3,000 B. G. sleepers	Rs. 4-2-0 per B. G. and Rs. 3 per N. G. sleeper.	
	Cuttack ...	Angul ...	Angul ...	Cuttack ...	.....	1 mile ...	½ pies ...	Sál	5,000 B. G. sleepers	Rs. 4-4 0 per B. G. and Rs. 2-10-0 per N. G. sleeper	Forest depôts would be formed at Tulka and Baghomunda on the edge of the forest, leaving 7 to 10 miles road and 70 to 80 miles river transport to Cuttack.
								Asan	5,000 B. G. sleepers	Rs 3-6-0 per B. G. and Rs. 2-3 0 per N. G. sleeper.	
	Puri ...	Puri ...	Khurda ...	Balugaon ...	.....	½ mile ...	2 pies ...	Sál	1,000 B. G. sleepers	Rs. 6 per B. G and Rs. 3-8-0 per N. G. sleeper.	Conservator says that the rate, which is that given by the Division Officer, seems high for B. G. sál sleepers; transport is, however, all by land.
								Asan	1,000 B. G. sleepers	Rs. 5 per B. G. and Rs. 3-3-0 per N. G. sleeper.	
BENGAL ...	Jalpaiguri ...	Buxa ...	Buxa Duar	Rajabhatkhawa ...	.....	*Nil*	*Nil* ...	Sál	5,000 B. G. sleepers	Rs. 4 per B. G and Rs. 2-5-0 per N. G. sleeper.	The size of the Cooch Behar section of the Eastern Bengal State Railway sleeper is 6′×8″ × 4′ 2″.
	Ditto ...	Jalpaiguri ...	Jalpaiguri	Ramsahai Hát ...	.....	*Nil*	*Nil* ...	Sál	2,000 B. G. sleepers	Rs 4 per B. G. and Rs 2-5-0 per N. G. sleeper.	There would be some 10 miles land transport to Ramsahai Hát. The available supply of mature sál is readily disposed of in the district and is generally required by neighbouring tea concerns.
	Darjeeling ...	Kurseong ...	Kurseong	Silliguri ...	.....	¼ mile ...	¼ pies ...	Sál	1,000 B. G. sleepers	Rs. 4-2-0 per B. G. and Rs. 2-6-0 per N. G. sleeper.	
								Asan	500 B. G. sleepers	Rs. 3 per B. G and Rs. 1-14-0 per N. G. sleeper.	
	Ditto ...	Tista ...	Kalimpong	Chunbatti ...	.....	6 miles from Dam Dim station on the Bengal Duars Railway.	2 annas ...	Sál	2,000 B. G sleepers	Rs. 4 per B. G. and Rs. 2-5-0 per N. G. sleeper.	
	Ditto ...	Ditto	Ditto	Raiang ...	.....	23 miles from Silliguri station of Eastern Bengal State Railway and also of Darjeeling-Himalayan Railway.	¼ annas ...	Sál	2,000 B. G. sleepers	Rs. 4 per B. G. and Rs. 2-5-0 per N. G. sleeper.	

Statement containing information regarding the supply of railway sleepers by the Forest Department—contd.

Province. (1)	Names of Forest Divisions and Civil Districts. Civil District. (2)	Forest Division. (3)	Address of Divisional Forest Officer. (4)	Names of timber depôts belonging to the Forest Department. (5)	Names of central places where timber and sleepers might, if necessary, be arranged for. (6)	Distances of depôts, or central places, from the nearest railway station. (7)	Cost of carriage, per cubic foot, from depôts or central places to railway station. (8)	Species of timber available. (9)	Probable annual supply available of wood fit for sleepers. (10)	Probable prices of broad and narrow-gauge sleepers. (11)	Remarks. (12)
BENGAL—*contd.*	Darjeeling ...	Darjeeling ...	Darjeeling	Sumbong ...	......	35 miles from Silliguri station of Eastern Bengal State Railway and also of Darjeeling-Himalayan Railway.	7 annas ...	Sál	500 B. G. sleepers	Rs. 3-14-9 per B. G. and Rs 1-13-0 per N. G. sleeper.	
	Chittagong ...	Chittagong ...	Chittagong	......	Chittagong* ...	......	......	......	......	......	*The Conservator remarks:—"It is just possible sleepers of the hardier woods of Chittagong could be supplied to the Assam-Bengal Railway at Chittagong, and to the Eastern Bengal State Railway and others at Calcutta at B. G. Rs. 4 to Rs. 4-9-6, and N. G. at Rs. 2 to Rs. 2-4-0."
N.-W. P. & OUDH, (Central Circle.)	Naini Tal and Almora-Bhabar.	Kumaun ...	Naini Tal	......	Lalkua railway station. Pilibhit railway station.	*Nil*	*Nil*	Sál ... ... / Sein	Sál, 100,000 c.ft. ... / Sein, 60,000 c.ft. ...	Sál, Rs. 2-4 to 4-8 ... / Sein, Rs. 1-10 to 3-4	The Conservator remarks:—"It is doubtful whether it would pay, at the prices here given, to cut up *really fine logs* of sál or sein into sleepers (in which case the quantity of timber here shown would *not* be available), seeing that we obtain at the auctions as high an average as Rs. 22 per standing sál tree, and Rs. 9 per standing sein tree. The system in this Circle is for the Department to sell the available crop of trees *in situ to contractors*, who then supply the requirements of the market. *Departments requiring timber must consequently negotiate with the contractors themselves.*"
	Naini Tal and Garhwal-Bhabar	Garhwal ...	Ditto ...	......	Kalagarh ...	25 miles to Nagina railway station.	5 annas	Sál ... ... / Sein	Sál, 120,000 c.ft. ... / Sein, 40,000 c.ft. ...	Sál, Rs. 2 to 4 ... / Sein, Rs. 1-8 to 3 ...	
	Garhwal-Bhabar	Ganges ...	Lansdowne	......	Kotdwara railway station.	*Nil*	*Nil*	Sál ... ... / Sein	Sál, 30,000 c.ft. ... / Sein, 5,000 c.ft. ...	Sál, Rs. 2-4 to 4-8 ... / Sein, Rs. 1-10 to 3-4	
(Oudh Circle.)	Kheri ...	Kheri ...	Lakhimpur	......	Sathiana ... / Changa Nala ...	7 miles to Sohila railway station. / 7 miles to Sonaripur railway station	1 anna / 1 anna	Sál ... / Asaina ...	150,000 N. G. sleepers. / 50,000 N. G. sleepers.	Sál, Rs. 1-11 on the railway. / Asaina, Rs. 1-1 on the railway.	No broad-gauge sleepers are allowed to be cut on account of the excessive waste involved.
(School Circle.)	Dehra Dun ...	Dehra Dun ...	Dehra Dun	Dakhpathar on the Jumna river.	Jaghadri or Delhi...	52 miles, by water, from Jagadhri railway station. 42 miles, by road, from Saharanpur station. 42 miles, by water, from Delhi.	2 annas, 3 pies per cubic foot, or 8 annas per broad gauge sleeper to Jagadhri, including canal dues. 2 annas, 7 pies per cubic foot, or 3 annas, 10 pies per metre gauge sleeper to Delhi, including canal dues.	Deodar ...	6,000 B. G. and 150,000 metre gauge sleepers.	Rs. 3-8-6 per broad gauge sleeper at Jagadhri. Rs. 1-12-0 per metre gauge sleeper at Delhi.	
PUNJAB	Kangra ...	Kulu ...	Nagar ...	Wazir Bholar ...	......	¼ mile ...	9 pies per cubic foot, 3 to 6 pies in log.	Deodar ...	96,000 cubic feet, or 27,200 B. G. sleepers	Rs. 3-8-0 per B. G. sleeper.	At present it is the custom to sell broad-gauge sleepers in the Punjab in four different classes, and the market rates are somewhat lower just now than the 'probable price' quoted, which is the estimated rate at which a permanent supply of serviceable sleepers is likely to be maintained.
		Kangra ...	Dharmsala	Doraha ...	......	Siding up to depôt 1 mile from station	1 pie ...	Do.	24,000 cubic feet, or 6,800 B. G. sleepers		A few thousand N.G. sleepers can generally be supplied by each Division, sawn out of pieces too small for B.G. sleepers, usual price Rs. 1-8 to Rs. 1-12-0 each.
	Hazara ... / Jhelum ...	Hazara ... / Jhelum ...	Abbottabad / Jhelum ...	Jhelum ...	......	¼ mile from Jhelum station.	2¼ pies ...	Deodar ... / Blue Pine ... / Firs	12,000 sleepers ... / 6,000 or more sleepers. /	Ditto ditto	
	Gujranwala ...	Chenab ...	Gujranwala and Shahpur.	Thatha Faqirulla (Gujranwala).	......	2 miles from Wazirabad station.	4 pies ...	Deodar ...	50,000 sleepers ...	Ditto ditto.	
	Chamba State	Chamba ...	Chamba ...	Shahdera (Lahore.)	......	2¼ miles from Badami Bagh station.	1·66 pie ...	Deodar ... / Blue Pine ... / Firs ...	50,000 sleepers ... / ...	Ditto ditto.	
	Bashahr State	Bashahr ...	Phillour and Kilba.	Doraha (Ludhiana)	......	Siding up to depôt 1 mile from station	1 pie ...	Deodar ... / *Pinus excelsa* ...	96,000 cubic feet, 27,200 B.G. sleepers. No market at present for sleepers.	Ditto ditto.	
LOWER BURMA (Pegu Circle).	Thayetmyo ...	Thayetmyo ...	Thayetmyo	Yuataung ...	......	48 miles ...	2 annas ...	In, Thitya, Linga Yôn and Lein.	*Nil*	......	No woods at present fit for sleepers are available.

Statement containing information regarding the supply of railway sleepers by the Forest Department—contd.

Province.	Names of Forest Divisions and Civil Districts.			Names of timber depôts belonging to the Forest Department.	Names of central places where timber and sleepers might, if necessary, be arranged for.	Distances of depôts, or central places, from the nearest railway station.	Cost of carriage, per cubic foot, from depôts or central places to railway station.	Species of timber available.	Probable annual supply available of wood fit for sleepers.	Probable prices of broad and narrow-gauge sleepers.	Remarks.
	Civil District.	Forest Division.	Address of Divisional Forest Officer.								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LOWER BURMA (Pegu Circle)—*contd.*	Prome	Prome	Prome	Prome (river depôt)	...	1½ miles	5 pies	Pyinkado, Thitya and many other species.	30,000 B. G. pyinkado sleepers.	Rs. 3-0-0 per B. G. sleeper, and Re. 1-12-0 per N. G. sleeper.	Prices quoted for delivery at Prome.
				Padegon (railway station).							
				Thegon (railway station).	...	*Nil*	*Nil*				
				Paungdè (railway station).					5,000 B. G. thitya sleepers.	Rs. 2-4-0 per B. G. sleeper, and Re. 1-2-0 per N. G. sleeper.	Prices quoted for delivery at Padigôn, Thegon and Paungdè railway stations.
	Tharrawaddy	Tharrawaddy	Tharrawaddy.	Nattalin ...							
				Zigon							
				Gyobingauk ...	...	All at railway stations.	*Nil*	Pyinkado, Thitya, etc.	80,000 B. G. pyinkado sleepers.	Rs. 3 to 4 per B. G. sleeper, and Re. 1-12-0 per N. G. sleeper.	
				Okpo ...							
				Tharrawaddy ...							
	Rangoon	Rangoon	Rangoon	Taikgyi ...							
				Pugyi ...							
				Wagetchaung ...	...	Ditto ...	*Nil*	Pyinkado, Pyinma, Taukkyan and other species.	25,000 B. G. pyinkado sleepers.	Rs. 3 to 4 per B. G. sleeper, and Re. 1-8-0 to 2 per N. G. sleeper.	
				Thanatchaung ...							
				Palon ...							
	Pegu	Pegu	Pegu	Pegu ...	...	¾ths of a mile ...	1 anna ...	Pyinkado and other species.	3,000 B. G. pyinkado sleepers.	Rs. 3 to 4 per B. G. sleeper, and Re. 1-8-0 per N. G. sleeper.	
	Bassein	Bassein	Bassein	Bassein ...	...	1 mile from steamer wharf.	7 pies (to steamer wharf).	Pyinkado, Pyinma, Thitya, etc.	50,000 B. G. pyinkado sleepers.	Rs. 3 per B. G. sleeper, and Re. 1-7-0 per N. G. sleeper.	Prices at Bassein.
	Henzada	Henzada	Henzada	Myanaung ...	...	The depôts are on the bank of the Irrawaddy river.	...	Pyinkado, Pyinma, Thitya, etc.	40,000 B. G. sleepers.	Rs. 3-6-0 per B. G. sleeper, and Re. 1-9-0 per N. G. sleeper.	Prices at Rangoon.
				Henzada, etc. ...						Rs. 3 per B. G. sleeper, and Re. 1-7-0 per N. G. sleeper.	
	Rangoon	...	...	...	...	2 miles ...	1 anna ...	Teak	84,000 tons in log...	.....	Teak timber could be supplied also at all depôts in the Prome, Tharrawaddy, Rangoon and Pegu Divisions, but the quantity available in the Rangoon depôt would be correspondingly diminished.
	Amherst ...	Agency ...	Moulmein	Battery Point ...	...	Rangoon, nearest railway station.	1 anna 10 pies for teak and 3 annas 6 pies for pyinkado, by steamer from Moulmein to Rangoon.	Pyinkado ...	?	Rs. 3-0-0 per B. G. and 1-8-0 per N. G. sleeper.	
	Toungoo ...	Shwegyin ...	Shwegyin	Anoukpet ...	...	12 miles from Nyaungyan railway station by land in dry weather, and 22 by boat.	2 annas ...	Pyinkado ...	?	Rs. 3-0-0 per B. G. and 1-8-0 per N. G. sleeper at Madouk.	
	Pegu ...	Shwegyin ...	Shwegyin	Myitkyo ...	...	43 miles by water to Pegu or Tawa railway station.	3 annas ...	Pyinkado ...	?	Rs. 3-0-0 per B. G. and Re. 1-8-0 per N. G sleeper at Rangoon.	
								Thingan ...	Limited supply ...	Rs. 4-4-2 per B. G. and Rs. 2-2-0 per N. G. sleeper.	
(Tenasserim Circle.)	Tavoy ...	South Tenasserim.	Tavoy ...	Sinzeik ...	...	No railway station nearer than Rangoon.	2 annas 6 pies ...	Anan ...	Plentiful ,, ...	Rs. 3-10-6 per B. G and Re. 1-14-5 per N. G sleeper.	
								Pyinkado ...	Limited ,, ...	Rs. 3-10-6 per B. G. and Re. 1-14-5 per N. G sleeper.	
			Tavoy ...	Nouk ...	...	Ditto ...	3 annas 3 pies ...	Thingan ...	Limited supply ...	Rs. 4-4-2 per B. G. and Rs 2-2-0 per N. G. sleeper.	
	Mergui ...	South Tenasserim.						Pyinkado ...	,, ,, ...	Rs 3-10-6 per B.G and Re. 1 14-5 per N. G sleeper.	
					Victoria Point ...	Ditto ...	4 annas 10 pies ...	Thabyance ...	Limited supply ...	Rs. 3-10-6 per B. G. and Re 1-14-5 per N. G. sleeper.	
					Maliwan ...			Gangaw ...	Plentiful ,, ...		
	Toungoo ...	Toungoo ...	Toungoo	Tonngoo ...	...	In the vicinity of Toungoo railway station.		Pyinma ...	,, ,, ...		
								Pyinkado ...	,, ,, ...	Rs. 3-0-0 per B. G. and Re. 1-8-0, per N. G sleeper delivered at Myohla or Thagaya railway stations.	
UPPER BURMA. (Eastern Circle.)	Mandalay ...	Mandalay ...	Mandalay	.....	Mandalay railway station.	*Nil*	*Nil*	Pyinkado ...	*10,000 N. G. sleepers.	Rs. 3 to 4 per B. G and Re. 1-8-0 per N. G sleeper.	*Of B. G. sleepers only one-third of these quantities could be delivered.
								Thitya } Inggyin } ...	15,000 N. G. sleepers.	Rs 3-12-0 per B. G and Re. 1-12-0 per N. G. sleeper.	
					Thazi railway station.	*Nil*	*Nil*	Thitya } Inggyin } ...	*5,000 N. G. Pyinkado sleepers.	Rs. 3 to 4 per B G. and Re 1-8-0 per N. G. sleeper.	
									10,000 N. G. Thitya and Inggin sleepers.	Rs. 3-12-0 per B. G. and Re 1-12-0 per N. G. sleeper.	

Statement containing information regarding the supply of railway sleepers by the Forest Department—contd.

Province. (1)	NAMES OF FOREST DIVISIONS AND CIVIL DISTRICTS. Civil District. (2)	Forest Division. (3)	Address of Divisional Forest Officer. (4)	Names of timber depôts belonging to the Forest Department. (5)	Names of central places where timber and sleepers might, if necessary, be arranged for. (6)	Distances of depôts or central places, from the nearest railway station. (7)	Cost of carriage, per cubic foot, from depôts or central places to railway station. (8)	Species of timber available. (9)	Probable annual supply available of wood fit for sleepers (10)	Probable prices of broad and narrow-gauge sleepers. (11)	REMARKS. (12)
UPPER BURMA (Eastern Circle)—*contd.*	Yamethin ...	Pyinmana ...	Pyinmana	......	Thawati railway station. Ela railway station. Pyinmana railway station. Kyidaunggan railway station. Shwemyo railway station. Thatkon railway station. Nyaunglun railway station. Hngetthaik railway station. Yamethin railway station. Pyawbwe railway station.	*Nil*	*Nil*	Thitya and Ingyin, besides In, Taukkyan, Hmaw MaU, Leza.	500,000 N. G. and 200,000 B. G. sleepers approximately.	Rs. 3-0-0 per B. G. and Re. 1-8-0 per N G. sleeper.	The prices are from outside the reserves after paying local duty.
	Katha ...	Katha ...	Katha ...	Katha ...	......	*Nil*	*Nil*	Teak ...	80,000 N. G. and 30,000 B. G. sleepers at river depôt. At railway stations 40,000 N. G. and 15,000 B. G. sleepers.	Rs. 4 per B. G. and Re. 1-6-0 per N. G. sleeper.	
				Tigyaing ...	......	40 miles for Katha railway station.	"				
				Thabeikyin ...	......	About 70 miles from Mandalay.	"				
				Hopin ..	......	*Nil*	*Nil*	In ...	"	Rs. 2 per B. G. sleeper.	
					Mogaung, Taungni, Mohnyin, Kadu, Mawhun, Mawlu, Pinwe, Naba, Indaw, Seywa, Meza, Bonchaung, Nankan railway stations.	*Nil*	*Nil*	Ingyin ... Kanyin ... Pyinkado ...	30,000 N. G. and 12,000 B. G. sleepers.	Rs. 2-8-0 per B. G. and Re. 1-2-0 per N. G. sleeper.	
	Bhamo ...	Bhamo ...	Bhamo ...	......	Myitkyina and Katha railway stations.	Myitkyina, ¼ mile from railway station yard on the river. At high water floating can be done.	1 pie ...	Thadi and In ...	5,000 sleepers ...	Rs. 3 per B. G. and Re. 1-8-0 per N. G. sleeper.	Not more than two years' supply can at present be contracted for.
								Teak ...	Sparingly ...	Rs. 4 per B. G. and Re. 1-8-0 per N. G. sleeper	
	Ruby Mines ...	Ruby Mines ...	Katha ...	......	No depôts, but all timber could be sent to Mandalay.	Information not available.	"	Pyinkado ...	2,000 trees ...	Rs. 3 to 4 per B. G. and Re. 1-8-0 per N. G. sleeper.	
								Kanyin ...	4,000 trees ...		
								In ...	Any quantity ...	Rs. 2-8-0 per B. G. and Re. 1-2-0 per N. G. sleeper.	
								Ingyin ...	Any quantity ...		

Province. (1)	Civil District. (2)	Forest Division. (3)	Address of Divisional Forest Officer. (4)	Names of timber depôts belonging to the Forest Department. (5)	Names of central places where timber and sleepers might, if necessary, be arranged for. (6)	Distances of depôts or central places, from the nearest railway station. (7)	Cost of carriage, per cubic foot, from depôts or central places to railway station. (8)	Species of timber available. (9)	Probable annual supply available of wood fit for sleepers (10)	Probable prices of broad and narrow-gauge sleepers. (11)	REMARKS. (12)
	Pakôkku ...	Yaw ...	Pakôkku...	Pakôkku	...	35 miles by steamer to Myingan railway station.	2 annas	Thitya, Ingyin, In, Pyinkado, Teak and Padouk.	Probably several hundred trees per annum.	Not known.	
				Zigat	...	207 miles by steamer to Prome railway station.	2 to 3 annas				
(Western Circle)	Shwebo ...	Mu ...	Shwebo ...	...	Any railway station between Kanbalu and Wuntho on the Mu Valley Railway.	*Nil*	*Nil*	Teak, In, Ingyin, Padouk and Pyinkado.	Probably 50,000 metre-gauge sleepers of Pyinkado per annum.	Rs. 3 per B. G. and Re. 1-8-0 per N. G. sleeper.	
	Kyaukse ...	Myittha ...	Mingin ...	Kalewa ...	...	150 miles to Alôn railway terminus.	Not known	Teak, Padouk and Pyinkado.	1,000 trees a year from unreserved forests.		
				Maukkadaw ...	...	90 miles to Alôn railway terminus.					
CENTRAL PROVINCES. (Northern Circle.)	Mandla ...	Mandla ...	Mandla ...	......	Jubbulpore railway station.	*Nil* ...	*Nil*	Sâl ...	150,000 c. ft. ...	Rs. 4 per B. G. and Rs. 2 per N. G. sleeper.	
	Nimar ...	Nimar ...	Khandwa	......	Nimar-Kheri and Sanawad railway stations (Rajputana-Malwa Railway).	*Nil* ...	*Nil*	*Hardwickia binata* and Mahua.	2,000 N. G. sleepers	Rs 2 per N. G *Hardwickia binata* sleeper. Re. 1-12-0 per N. G. mahua sleeper.	
(Southern Circle)	Chanda ...	Chanda ...	Chanda ...	Allapilli ...	......	93 miles from Warora, on the Great Indian Peninsula Railway.	7 annas ...	Saj ...	15,750 c. ft. ...	Rs 3-0-0 per B. G. and Rs. 1-8-0 per N. G. sleeper.	
			...	Moharli ...	......	50 miles from Warora.	5 " ...	Bijasâl	3,000 " ...	Rs. 3-0-0 per B. G and Re. 1-8-0 per N. G. sleeper.	
			...	Brahmapuri ...	......	80 miles from Warora.	6 annas, 6 pies ...	Mahua ...	27,500 " ...	Rs. 3-9-0 per B. G. and Rs. 1-11-0 per N. G. sleeper.	
	Balaghat ...	Balaghat ...	Balaghat	Topla-Balaghat ...	......	100 miles from Gondia on the Bengal-Nagpur Railway.	11 " 6 " ..	Sâl ...	35,000 " ...	Rs. 3-11-0 per B. G. and Re 1-13-0 per N. G. sleeper.	
ASSAM ...	Goalpara ...	Goalpara ..	Dhubri ...	Dhubri ...	......	1¼ miles from the Dhubri steamer ghât in the dry weather, and ¼ mile in the rains.	6 pies to 1 anna according to season.	Sâl ...	35,000 N.G. sleepers	Rs. 2-4-0 per N.G. sleeper	This price includes an estimated royalty of 12 annas per sleeper=8 annas per cubic foot sawn, representing about 4 annas per cubic foot in the log. The price offered for sleepers 6′ × 8″ × 4½″, by the Eastern Bengal Railway is Rs. 2 per sleeper. The Conservator remarks:—"By accepting a royalty of less than 12 annas per sleeper we should not be working on a commercial basis, since we can get a royalty of 4 annas in the log by departmental operations in extracting timber in the log for Bengali traders."

Statement containing information regarding the supply of railway sleepers by the Forest Department—*contd.*

Province. (1)	Names of Forest Divisions and Civil Districts. Civil District. (2)	Forest Division. (3)	Address of Divisional Forest Officer. (4)	Names of timber depôts belonging to the Forest Department. (5)	Names of central places where timber and sleepers might, if necessary, be arranged for. (6)	Distances of depôts, or central places, from the nearest railway station. (7)	Cost of carriage, per cubic foot, from depôts or central places to railway station. (8)	Species of timber available. (9)	Probable annual supply available of wood fit for sleepers. (10)	Probable prices of broad and narrow-gauge sleepers. (11)	Remarks. (12)
ASSAM—*contd.*	Kamrup ...	Kamrup ...	Gauhati ...	Kukurmara ...	......	9 miles by road from Polashari steamer ghât	2 annas ...	Sâl ...	20,000 N.G. sleepers	Rs. 2-1-0 per N.G. sleeper.	Includes a royalty of 12 annas per sleeper.
				Rani Gudam ...	......	9 miles by road from Polashari steamer ghât.	Ditto ...	Do. ...		Rs. 2-4-0 per N.G. sleeper.	
				Lohargthat ...	......	12 miles from Polashari steamer ghât.	2½ annas ...	Do. ...		Rs. 2-4-0 per N G. sleeper.	
				Ajhara ...	......	7 miles from Polashari steamer ghât.	1½ annas ...	Do. ...		Rs. 2-4-0 per N.G. sleeper.	
				Nagarbera ...	......	7 miles by river from Dalguma steamer ghât.	2 annas ...	Do. ...		Rs. 3 per N.G. sleeper	
	Darrang ...	Darrang ...	Balipara ...	Tejpur steamer ghât	......	*Nil* ...	*Nil* ...	Nahor (*Mesua ferrea*)	About 10,000 N.G. sleepers.	Rs. 2-4-0 per N.G. sleeper.	Includes a royalty of 12 annas per sleeper.
	Nowgong ..	Nowgong ...	Nowgong...	Nokhola ...	......	*Nil* ...	*Nil* ...	Sâl ...	About 10,000 N.G. sleepers.	Rs. 2-10-0 per N.G. sleeper.	Includes a royalty of 12 annas per N. G. sleeper. A reduction of 2 to 3 annas per sleeper for carriage might be practicable.
				Chaparmukh ...	......	*Nil* ...	*Nil* ...				
				Kampur ...	......	*Nil* ...	*Nil* ...				
				Messa ...	......	10 miles from Silghat steamer ghât.	2½ annas ...				
	Sibsagar ...	Sibsagar ...	Dibrugarh	Moriani ...	......	*Nil* ...	*Nil* ...	Uriam (*Bischoffia javanica.*)	Possibly 10,000 N.G. sleepers.	About Rs. 1-12-0 to Rs. 2 per N.G. sleeper for Uriam. Sleepers of Nahor would probably cost 3 to 4 annas more than Uriam.	......
				Dinapur ...	......	*Nil* ...	*Nil* ...	Nahor (*Mesua ferrea*) Ajhar (*Lagerstrœmia.*)			
	Lakhimpur ...	Lakhimpur ...	Dibrugarh	......	Railway stations on the Dibru-Makuna railway line.	*Nil* ...	*Nil* ...	Uriam and Nahor	60,000 N.G. sleepers	About Re. 1-12-0 to Rs. 2 per N.G. sleeper for Uriam. Sleepers of Nahor would probably cost 3 to 4 annas more than Uriam.	Includes 12 annas royalty. The Conservator remarks:— "This quotation of rates is not to be relied upon. We have no experience to guide us."
				Dibrugarh ...	......	*Nil* to Dibrugarh steamer ghât.	*Nil* ...			Re. 1-13-0 per sleeper of Uriam, and Rs. 2-1-0 per sleeper of Nahor.	Includes royalty of 12 annas. The cost of further carriage by steamer from Dibrugarh ghât to Dhubri would be 2 annas per cubic foot. The Conservator remarks:—"These rates are uncertain."

Statement containing information regarding the supply of railway sleepers by the Forest Department—contd.

Province. (1)	Names of Forest Divisions and Civil Districts. Civil District. (2)	Forest Division. (3)	Address of Divisional Forest Officer. (4)	Names of timber depôts belonging to the Forest Department. (5)	Names of central places where timber and sleepers might, if necessary, be arranged for. (6)	Distance of depôts, or central places, from the nearest railway station. (7)	Cost of carriage, per cubic foot, from depôts or central places to railway station. (8)	Species of timber available. (9)	Probable annual supply available of wood fit for sleepers. (10)	Probable prices of broad and narrow-gauge sleepers. (11)	Remarks. (12)
COORG ...	......	Coorg ...	Mercara ...	......	Hunsur ...	29 miles from Paschimvahini railway station.	2¼ annas per c. ft. from Hunsur to Paschimvahini, and 4¼ annas per c. ft. from the forests of Coorg to Hunsur.	Teak, Honne (*Pterocarpus Marsupium*), Matti (*Terminalia tomentosa*), Nandi (*Lagerstrœmia microcarpa*) Dindiga (*Anogeissus latifolia*) and many others.	10,000 c. ft. of Teak and 20,000 c. ft. of Matti.	*Teak*—Rs. 3-8-0 per B. G. sleeper and Re. 1-12-0 per N. G. sleeper. *Matti.*—Re. 1-12-0 per B. G. sleeper, and 14 annas per N. G. sleeper.	These are the prices for sleepers delivered at Hunsur. If delivery was required at the Paschimvahini railway station the prices would be decreased by 2 annas per sleeper all round.
AJMERE ...	......	Ajmere Merwara.	Ajmere ...	......	......	......	......	......	......	......	There is no timber available that can be used for railway sleepers. All the wood that grows is fit for fuel only, and this is removed by local purchasers.
BALUCHISTAN.	......	Baluchistan ...	Quetta ...	......	......	......	......	......	......	......	There is no timber suitable for railway sleepers.
ANDAMANS	Northern District.	Andamans ...	Port Blair	Haddo	......	Approximately 800 miles to Howrah railway station over sea.	4 annas, 9 pies ...	Gangaw (*Mesua ferrea.*)	200 tons ...	Rs. 3-4-9 per B. G. sleeper and Re. 1-10-0 per N. G. sleeper delivered free on board at Port Blair.	
BERAR ...	Ellichpur ...	Ellichpur ...	Chikalda ...	......	Ellichpur ...	Ellichpur will shortly be a railway terminus.	......	Teak, Haldu and Sain.	Between 4,000 and 5,000 B. G. sleepers.	About Rs. 2-6-0 per sleeper.	

Statement containing information regarding the supply of railway sleepers by the Forest Department—contd.

Province.	NAMES OF FOREST DIVISIONS AND CIVIL DISTRICTS. Civil District.	Forest Division.	Address of Divisional Forest Officer.	Names of timber depôts belonging to the Forest Department.	Names of central places where timber and sleepers might, if necessary, be arranged for.	Distance of depôts, or central places, from the nearest railway station.	Cost of carriage, per cubic foot, from depôts or central places to railway station.	Species of timber available.	Probable annual supply available of wood fit for sleepers.	Probable prices of broad and narrow-gauge sleepers.	REMARKS.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
MADRAS PRESIDENCY.	Ganjam ...	Ganjam ...	Chatrapur	Russelkonda ...	Berhampore, East Coast Railway.	......	Rs. 3-6-0 by country cart. Proposed to connect the depôt with Berhampore by a branch railway.	Sál ...	3,500 sleepers ...	Rs. 2-6-0 per B. G. sleeper.	The rates, per sleeper, quoted include establishment charges calculated on current scale of expenditure and do not provide for any profit or include the price of the wood in the forest. The probable prices would be per B. G. sleeper Rs. 4 to Rs. 4-8-0, and per N. G. sleeper Rs. 2-8-0.
	Vizagapatam...	Vizagapatam...	Vizagapatam.	......	Narasapatnam road railway station, East Coast Railway.	*Nil* ...	*Nil* ...	*Terminalia tomentosa.*	2,500 „ ...		
(Northern Circle.)	Godavery ...	Godavery ...	Cocanada..	Rajahmundry ...	Rajahmundry, East Coast Railway.	*Nil* ...	*Nil* ...	*Terminalia tomentosa.* *Xylia* ... *Xylia* ... *Terminalia tomentosa, &c.*	3,500 sleepers .. 500 „ ... 10,000 sleepers ... 5,500 „ ...	Rs. 3 per B. G. sleeper Rs. 3-2-0 per B. G. sleeper.	
	Kurnool ...	Kurnool ...	Kurnool ...	......	Chelama and Nandyal railway stations, Southern Maratha Railway.	*Nil* ...	*Nil* ...	*Terminalia tomentosa.* *Pterocarpus Marsupium.*	3,000 sleepers ... 2,000 „ ...	Rs. 2-2-0 per N. G sleeper.	
(Central Circle)	...	...	...	......	......	......	......	.. ...	......	.....	There are no districts in this Circle in a position to supply railway sleepers for many years to come.
(Southern Circle.)	South Canara	South Canara	Mangalore	Wandse ...	......	8 miles from sea-port.	4 pies water carriage.	(1) *Hopea parviflora,* (2) *Xylia dolabriformis,* (3) *Terminalia tomentosa,* (4) *Terminalia paniculata,* (5) *Pterocarpus Marsupium,* (6) *Dalbergia latifolia,* (7) *Calophyllum elatum,* (8) *Lagerstrœmia microcarpa,* (9) *Pœciloneuron indicum.*	Of (1), (2) and (3) about 50,000 c. ft., and of (9), which will have first to be tested, another 50,000 c. ft.; (4), (7) and (8) are not likely to be accepted; (5) and (6), even if acceptable, would command better prices in other forms than sleepers.	The rate for broad-gauge sleepers would vary from Rs. 4-8-0 to Rs. 5- -0, but an average of Rs. 5 per sleeper would be sufficiently profitable. Rates for narrow-gauge sleepers would vary, but the average price would be about Rs. 2-8-0 per sleeper.	The *Conservator remarks, with reference to column 10, that the wastage from various causes is likely to be not less than 50 per cent., and that it may be roughly estimated that in order to produce a narrow-gauge sleeper 3 cubic feet of timber will be wanted.
				Sonda ...	......	15 miles from sea-port.	8 pies water carriage.				
				Begi ...	......	20 miles from sea-port.	1 anna water carriage.				
				Ajacar ...	......	25 miles from sea-port.	3 annas.				
				Mangalore ...	......	Sea-port ...	*Nil.*				
				Pane Mangalore ...	......	6 miles from sea-port.	9 pies water carriage.				
				Jalsur ...	......	30 miles from sea-port.	5 annas.				
MADRAS PRESIDENCY (Southern Circle)—*contd.*	North Malabar	North Malabar	Manantoddy	......	Chedbeth ...	68 miles from Calicut, and 55 miles from Namjangoda railway station.	9 to 11 annas ...	(1) Teak, (2) *Dalbergia latifolia,* (3) *Pterocarpus Marsupium,* (4) *Terminalia tomentosa,* (5) *Lagerstrœmia microcarpa,* (6) *Anogeissus latifolia.*	Of (4) and (6) 75,000 c. ft.; (5) would not be acceptable; (1), (2) and (3) it would not pay to sell in sleepers.	Ditto.	
					Begur ...	59 miles from Tellicherry (sea-port), and 63 miles from Mysore railway station.	8 to 10 annas to Tellicherry, 6 annas to Mysore.				
	South Malabar	South Malabar	Nilambur	Nedunkayam ...	......	50 miles ...	2 annas	*Xylia dolabriformis, Terminalia tomentosa, Hopea parviflora.*	80,000 c. ft. ...	Ditto.	
				Dhoni ...	......	10 miles ...	1 anna				
	Nilgiris ...	Nilgiris	Ootacamund	......	Mudamalai and Benne.	63 miles to Calicut station.	14 annas	(1) *Terminalia tomentosa,* (2) *Acacia,* (3) Blue gum.	20,000 c. ft. of (1), and 5,000 of (2) and (3).	Ditto.	
					Coonoor ...	½ mile ...	6 pies				
					Wellington ...	4 miles ...	?				
					Ootacamund ..	11 miles from Coonoor.	4 annas				
	North Coimbatore.	North Coimbatore.	Coimbatore	Kollegal ...	......	43 miles from Mudder, Southern Mahratta Railway.	4 annas on an average.	*Terminalia tomentosa.*	10,000 c. ft. ...	Ditto.	
				Thamarakarai ...	......	38 miles from Erode railway station.					
	South Coimbatore.	South Coimbatore.	Ditto	Coimbatore ...	......	Adjoining railway compound.	Loading 4 annas, carting 4 annas, unloading 4 annas for each log.	*Terminalia tomentosa, Anogeissus latifolia.*	25,000 c. ft. ...	Ditto	There are extensive evergreen forests in the South Coimbatore Division, containing large quantities of *Mesua ferrea, Pœciloneuron pauciflorum, Bassia elliptica, etc.* The acceptability of any of these timbers by the Madras and South Indian railways will only be ascertained after a prolonged trial. These forests are between 60 and 75 miles from the nearest railway station, and transport charges will be very heavy, and this and other circumstances will make it difficult to work them.
				Pollachi ...	......	25 miles ...	1 anna 6 pies ...				
				Mount Stuart ...	......	50 miles ...	5 annas ...				
	Tinnevelly ...	Tinnevelly ...	Palamcottah	Ambasamudram ...	......	23 miles from Tinnevelly, and a would-be-station in the Tinnevelly-Quilon proposed extension.	1 anna 10 pies ...	*Hopea Wightiana, Balanocarpus utilis,* and other timbers to order, such as *Vitex altissima* and *Mesua ferrea.*	70,000 c. ft. ...	Ditto	None of the timbers named have been accepted at present as suitable for railway sleepers. Several years will elapse before any opinion of their value can be expressed.

Statement containing information regarding the supply of railway sleepers by the Forest Department—contd.

Province. (1)	Names of Forest Divisions and Civil Districts. Civil District. (2)	Forest Division. (3)	Address of Divisional Forest Officer. (4)	Names of timber depôts belonging to the Forest Department. (5)	Names of central places where timber and sleepers might, if necessary, be arranged for. (6)	Distances of depôts, or central places, from the nearest railway station. (7)	Cost of carriage, per cubic foot, from depôts or central places to railway station. (8)	Species of timber available. (9)	Probable annual supply available of wood fit for sleepers. (10)	Probable prices of broad and narrow-gauge sleepers. (11)	Remarks. (12)
BOMBAY PRESIDENCY.	Surat ...	Surat ...	Surat ...	Wagrech ...		1 mile from Bilimora on the Bombay, Baroda and Central India Railway.	1½ pie per mile per c. ft.				
(Northern Circle.)					Dangs forests ...	20 miles from Vyárá on the Tapti Valley Railway, 15 miles from Songad on the Bhavnagar-Wadhwan Branch Railway (Baroda territory), and 12 to 15 miles from Náwápur Railway station in the Khandesh District (Deccan).	2 annas per cubic foot to Vyárá and Songad, and 1 anna 6 pies to Náwápur.	*Tectona grandis, Terminalia tomentosa, Dalbergia latifolia, Acacia arabica, Zizyphus Jujuba, Acacia Catechu, Acacia Sundra, Pterocarpus Marsupium, Ougeina dalbergioides.*	Not possible to estimate the annual supply of timber available, as there is no working-plan, and no regular fellings are made.	Teak sleepers were manufactured in the Dangs for the Tapti Valley Railway by a contractor, who paid a royalty of Rs. 2-8-0 per B. G. sleeper and received Rs. 5-4-0 from the Tapti Valley Railway Company. Rates for N. G. sleepers cannot be quoted.	
(Central Circle)	......	......	......	......	......	......	......	......	......	......	No timber suitable for railway sleepers will be available for many years to come.
	Kanara ...	Kanara, Northern Division.	Haliyál ...	Haliyál ...	...	7½ miles from Alnavar, Southern Mahratta Railway.	1 anna, 6 pies ...	Teak ...	75,000 c. ft. ...	Rs. 5-4-0 per B. G. and Rs. 3 per N. G. sleeper.	
								Terminalia tomentosa.	10,000 c. ft. ...	Rs. 3-0-0 per B. G., and Rs. 1-12 0 per N. G. sleeper.	
				Barchi ...	...	13 miles from Tawarkatti, Southern Mahratta Railway.	3 annas ...	*Terminalia paniculata.*	10,000 c. ft. ...	Rs. 3-0-0 per B. G. and Re. 1-12-0 per N. G. sleeper.	
(Southern Circle).		Kanara, Southern Division.	Yellapur...	Kirwatti ...	...	30 miles from Hubli, Southern Mahratta Railway.	3 annas, 3 pies ...	Teak	50,000 c. ft. ...	Rs. 5-4-0 per B. G. and Rs. 3 per N. G. sleeper.	
				Telgeri ...	...	38 miles from Hubli	3 „ 3 „ ...	*Dalbergia latifolia*	2,000 c. ft. ...	Re. 1-12-0 per c. ft. sawn timber.	
								(1) *Terminalia tomentosa* and (2) *Xylia dolabriformis.*	30,000 „ ...	(1) Rs. 3-0-0 per B. G. and Re. 1-12-0 per N. G. sleeper. (2) Rs. 3-8-0 per B. G. and Re. 1-13-0 per N. G. sleeper.	
				Mundgod ...	...	30 miles from Hubli	3 annas ...	Teak	10,000 c. ft. ...	Rs. 5-4-0 per B. G. and Rs. 3-0-0 per N. G. sleeper.	
								Terminalia tomentosa.	10,000 c. ft. ...	Rs. 3-0-0 per B. G. and Re. 1-12-0 per N. G. sleeper.	
								Terminalia paniculata.	10,000 c. ft. ...	Rs. 3-0-0 per B. G. and Re. 1-12-0 per N. G. sleeper.	
		Kanara, Western Division.	Karwar ...	Kodibag ...	...	3 miles from the port of Karwar.	...	Teak	50,000 c. ft. ...	Rs. 5-4-0 per B. G. and Rs. 3-0-0 per N. G. sleeper.	
	Belgaum ...	Belgaum ...	Belgaum...	Nagargali ...	...	½ mile from Nagargali railway station.	4 pies ...	Teak	3,000 c. ft. ...	Rs. 5-4-0 per B. G. and Rs. 3-0-0 per N. G. sleeper.	
								Terminalia tomentosa.	1,000 c. ft. ...	Rs. 3-0-0 per B G. and Re. 1-12-0 per N. G. sleeper.	
								Terminalia paniculata.	1,000 c. ft. ...	Rs. 3-0-0 per B. G. and Re. 1-12-0 per N. G. sleeper.	
(Sindh Circle)	......	......	......	......	......	......	......	......	......	......	No sleeper operations are carried on by the Forest Department. Babul is the only timber suitable for sleepers, but it is not much in request by the North-Western Railway, the only State Railway in Sind. Occasionally the Railway indents for bottom-boards, for which and other similar requirements it is referred to the coupe contractors, who work the forests.

G. C. Press, Simla.—No. 239 R. & A. D.—14-9-99.—250.

Enclosure to Director of Railway Construction's No. 2089 R. S. of 9th November 1899.

List of Conservators.

The Conservator of Forests, Northern Circle, Madras Presidency, Waltair.
" " " " Central " " " Madras.
" " " " Southern " " " Coimbatore.
" " " " Northern " Bombay " Bandra.
" " " " Central " " " Poona.
" " " " Southern " " " Belgaum.
" " " " Sindh " " " Jerruck.
" " " " Bengal, Darjeeling.
" " " " Central Circle, North-Western Provinces, Naini Tal.
" " " " School " " " Dehra Dun.
" " " " Oudh " " " Lucknow.
" " " " Punjab, Lahore.
" " " " Pegu Circle, Lower Burma, Rangoon.
" " " " Tenasserim Circle, Lower Burma, Rangoon.
" " " " Eastern Circle, Upper Burma, Mandalay.
" " " " Western Circle, " " "
" " " " Northern Circle, Central Provinces, Jubbulpore.
" " " " Southern Circle, Central Provinces, Nagpur.
" " " " Assam, Shillong.
" " " " Berar, Amraoti.
The Deputy Conservator of Forests, Coorg, Mercara.
" " " " " Baluchistan, Quetta.
" " " " " Andamans, Port Blair.
The Extra-Assistant Conservator of Forests, Ajmere, Ajmere.

G. I. C. P. O.—No. 520 P. W. D.—13-11-99.—370—T. C. S.

RAILWAY.

Government {1899} of Madras.

PUBLIC WORKS.

Recd. } 1899. *Enclosures*

Regd. *Spare copies*

G.O., Nos. 342, 343 Ry., 27th March 1899.

MARCH.

Supply of Sleepers

Forwarding a copy of proceedings embodying proceedings of the Board of Revenue regarding the — by the Forest Department, required for the railway extensions now under contemplation as well for annual renewals on the existing lines.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read—

G.O., No. 373 Ry., dated 5th March 1898 (communicated to Railway Administrations).

Read also the following papers :—

From—The Agent and Manager, Madras Railway.
To—The Deputy Consulting Engineer for Railways in Charge.
Dated—Madras, 16th August 1862, No. 556.

I have the honour to acknowledge the receipt of Captain O'Connell's letter No. 1005, dated the 3rd ultimo, requesting me to transmit, for the perusal of Government, all documents which may have been received from the Engineers respecting the relative durability of the several kinds of wood used for sleepers.

2. In reply I have the pleasure to transmit, herewith, an original letter from the Acting Chief Engineer, furnishing a statement of the average life of sleepers made of fourteen descriptions of timber and annexing a copy of a draft report prepared by the late Chief Engineer Mr. Ross upon the working of the forests in the District of Malabar under his superintendence. This draft seems to have been written, consequent on Lieutenant-Col. Johnston's letter, No. 7710, dated the 5th September 1861 (replied to by me on the 16th April and 2nd May 1862). But the sudden decease of Mr. Ross unfortunately prevented the completion of his report.

No. 548, dated 14th August 1862.

3. I shall feel obliged by your returning Mr. Pinson's letter, at your early convenience.

Enclosures.

From—The Chief Engineer, Madras Railway.
To—The Agent and Manager, Madras Railway.
Dated—Madras, 14th August 1862, No. 548.

I have to acknowledge the receipt of the Acting Consulting Engineer's letter No. 405 of the 3rd July.

I am not at present in a position to forward very extensive information upon the subject referred to, but I think it better (to avoid any further delay) to furnish you with the result of our experience upon the first or Madras division of the south-west line.

The following statement gives the average lives of sleepers of various woods, taken out of the line in a state of decay, and replaced by iron pot sleepers, up to the present date :—

Distinguishing mark.	Name of wood.	Average life.
A ...	Ancha	4 years, 7 months.
F ...	Kurrah Murdah	3 „ 10 „
C ...	Combadrie	4 „ 2 „
K ...	Cadookoy	4 „ 1 „
S ...	Saul	4 „ 2 „
E ...	Dud Eloopay	3 „ 10 „
Y ...	Eroovanloo	2 „ 8 „
V ...	Vangay	4 „ 3 „
P ...	Panlay	2 „ 10 „
R ...	Auray	2 „ 6 „
M ...	Myladee	1 „ 5 „
H ...	Myroothy	4 „ 3 „
D ...	Katvoy	4 „ 4 „
B ...	Karavalum	4 „ 2 „

I am awaiting returns from the Engineers of the other divisions on the south-west line, to enable me to ascertain the durability of errool which we confidently expect will turn out to be the best description of wood for sleeper purposes.

The creosoted sleepers of Baltic fir, which we have from time to time received from England, are, as a rule, exceedingly durable. We had recently occasion to take some decayed ones out of the line near Sholinghur, which were ascertained to have been in the road for a period of nearly 6½ years. The cost of these sleepers, however, interferes materially with their extensive use in this country.

I append to this letter a copy of a draft report in the hand-writing of the late Chief Engineer on the timber-cutting operations in the Malabar forests. The document will probably be interesting to Government, although not bearing directly upon the subject under reply.

Copy of Mr. Ross' Draft Reports.

In accordance with the desire of Government, I beg to submit a report about the timber-cutting operations in Malabar. These operations were conducted by myself for four years up to April 1861, since which time they have been conducted by Mr. Wilkinson, the Engineer in charge of districts 13 and 14.

It was found prior to 1857 that contractors could not be induced to bring sleepers in sufficient numbers, to supply the midland districts, and Mr. Heppel accordingly requested me to arrange for cutting timber myself, partly with a view to increase the supply, and partly for the purpose of letting contractors see that we were independent of them. The effect of these operations was to make contractors come forward and offer to supply us with sleepers, while at the same time we were supplying ourselves with a much better description of sleepers than we were able to purchase from contractors.

My first operations were in the jungles at the foot of the Anamalai Hills near Pollachi. The timber there was very fine, consisting principally of pillay murdah (*Terminalia Alata*) kurrah murdah (*Terminalia* ————) and errool (*Inga Xylocarpus*).

The Caders inhabiting these jungles came forward willingly to work for us then, and I had the satisfaction of teaching them, after a short time, the use of the cross-cut saw. The distance over which we had to cart the timber was so great that I was reluctantly obliged to abandon the operations in that jungle. I cannot help thinking that it might be to the interest of Government to connect the valuable forests in the Anamalai Hills by means of a tramway or light railway with the Madras Railway. The amount of timber (teak for the Bombay dockyard) now carried by bandy from Anamalai is very great. This tramway, if made to join the railway at either Palghat or Coimbatore, would run through a very rich country (that about Pollachi being considered very suitable for cotton).

After abandoning the Anamalai jungles, I was allowed by the Conservator of Forests to cut trees in the Chennet Nair forests near Palghat, and in the Walliar jungle, half way between Coimbatore and Palghat. The Walliar jungle has been almost entirely worked out, at least in those portions which are easy of access. The timber of which I found the greatest quantity was vela nagay, which, although stronger than any other, does not last more than four or five years when used as sleepers.

In working this jungle, I was able to bring common carts close up to the place where the trees were felled, and consequently had little use for elephants. In this jungle, I succeeded in getting the Malsens (natives of the jungle) to come forward and work. These tribes are averse to using any implement but the axe. I succeeded with some difficulty in inducing them to use the saw.

In working the Chennet Nair forest near Palghat, I tried to introduce a system. The trees useful for sleepers found in this forest are errool, kurrah murdah, and pillay murdah; there is also a good deal of vengay in one part of the jungle.

In this forest, I had to pay for every tree which was cut down one rupee and a half seigniorage to Government. In this agreement there were certain conditions by which I was prevented from cutting young trees, and which compelled me to cut trees not more than certain height (1′ 6″) above the ground. I was not allowed to cut teak or black wood, and it was understood that I was to do my best to conserve the forest. My system here was to do as much as possible by contract—the tree was cut down, cut into lengths of ten feet and squared, all by contract.

In cutting the tree into lengths of ten feet, the contractors occasionally used the cross-cut saw. After the tree was cut into lengths of ten feet, elephants were brought in to drag out the timber to the nearest jungle road where depots were formed along its line. At these depots the logs were tilted and all underwood cut away from near them. This was done to prevent any damage from fire during the dry season. From these depots, I carted all timbers that could be put into common bandies, the roads were bad, but as a general rule, it is better to do as much work as possible out of the jungle, and for this reason I reduced the logs only sufficiently to

enable me to cart them. In this, as in most jungles, the fever was a great hindrance to our successful working; there are high hills on three sides of it. It is said during the monsoon to be free from fever, but on one occasion I slept there for two nights during the monsoon, the result was that all my servants got fever of a very virulent kind, and one of them unfortunately died of it. With these servants, I took every usual precaution. In working these jungles it was necessary for me occasionally to bring out very large logs (40′ × 1′ 2″ × 1′ 2″) of the heaviest wood (kurrah murdah) for use in the railway.

In doing this, I tried to economise elephant labour. I used in some cases sling carts, the logs were suspended at about two-third of the length underneath the axle, and the elephant was then ordered to pull, the objections to this mode of taking heavy logs out of the jungle are the difficulty which the elephant experiences in taking the load down hill, and the great strength of which it is necessary to make the carts. I also tried a pair of small wheels placed under one end of the log, but this, although it worked well on tolerably smooth ground, was awkward to manage in crossing nullahs. These are difficulties, however, which may be overcome. For elephants in Malabar, we paid at the rate of Rs. 5 per day.

I hoped, at one time, to have been able to do a good deal of the sawing work by steam, and I proposed on first entering this forest, to get a steam engine and sawing apparatus from Home. The contract time has now nearly expired and it would not be worth while getting out a sawing apparatus without knowing whether the lease will be renewed. I would prefer steam to water power, as with steam you are more independent, and fuel would cost nothing.

Government may not think that it is profitable to let the forest to us on the same terms. It is true that the amount paid to the Conservator of Forests has not been much each year; this is because I have always made it a rule to cut not a single tree in excess of what I was able to carry out. I think, however, that this is in reality the most profitable way in which Government can use the forests, because while we take a comparatively small number of trees out of the jungle, we conserve it, and at the same time, do all in our power to avoid injury to the young trees.

My opinion is that in working forests, it would be advisable to try whether a very light tramway could not be used with advantage.

In this forest, I intended to have put up a large charcoal oven for the purpose of converting all waste branches, &c., into charcoal; this oven is now being erected and will, I have no doubt, be of great service, both in economising the timber, and in clearing the ground from waste timber which takes fire during the dry season, and injures so many young trees, and sometimes also, unless precautionary measures have been taken, destroys logs ready for transport. A charcoal oven might, I think, to be put up in most jungles.

The usual time for cutting trees in this and in other jungles is in the middle of the monsoon; this is on account of its being impossible to remain in most of them after the dry weather has set in. It is usual at Home to cost trees only when the sap is down; very few of the trees in this country are deciduous; I doubt therefore whether it is of so much consequence to cut the trees at any particular time of the year. It is, however, of great importance that after the tree is cut down it should undergo a proper seasoning. To effect this, I think that after the tree is cut, it should be squared and hauled away to some situation, when it can be tilted at a considerable angle, where no rank vegetation is allowed to grow about it, and where it can be exposed to a free current of air, but above everything rank vegetation ought not to be allowed to get near it.

It is difficult to estimate the cost of the sleepers which have as yet been turned out from the jungles worked by ourselves, as we have still a large quantity of timber unconverted. The price will not be greater than that which we have to pay contractors, while the character of the sleeper is infinitely superior.

I have gradually lost confidence in every kind of countrywood, except errool and vengay. Teak I put out of the question as being too expensive; almost all other description of timber I have seen decay when used as sleepers.

With reference to many of the inferior woods, which are almost useless, I have already asked for an apparatus such as that used by Boncherie to be sent from Home. I am inclined to think that with such an apparatus the worthless timber might be made valuable. It would be difficult or next to impossible to use this apparatus with hard woods as kurrah murdah, but it would be a very great matter if, by the use of the Boncherie process such inferior woods as thanee, eloopay and padrie, &c., could be rendered useful. I do not mean merely for sleepers, but those woods which at present command very little sale, might, under these circumstances, become a source of profit as well to Government as to the Railway Company.

In conclusion, I have to say that although having so many other duties to attend to, I was unable to introduce as many improvements as I would wish in working the forests; still I believe that much could be done to work forests effectually, were pains taken to improve the means of carriage, to improve the roads, and to economise elephant labour and sawing power. These improvements could only be effected with close supervision.

I would especially recommend that the Boncherie process be tried. It is not an expensive process, and the trial would not cost much.

From—The Agent and Manager, Madras Railway.
To—The Consulting Engineer for Railways, Madras.
Dated—Madras, 12th March 1898, No. 9294/B. 218.

I have the honour to inform you that, on the 10th ultimo, I enquired of my Board, at the request of the Chief Engineer, at what rate, inclusive of freight, good creosoted pine sleepers 10′ × 10″ × 5″ could be delivered at Madras, and in reply I have to-day received the following telegram:—

Sleeper 10 feet eight and two, 9 feet six and six

which is understood to mean that sleepers 10 feet in length can be delivered at 8*s.* 2*d.*, and those 9 feet in length at 6*s.* 6*d.*

Note by the Consulting Engineer for Railways, Madras, dated 25th March 1898.

Railway Sleepers in Malabar.

There will soon be a very heavy demand for 136,000 railway sleepers for the Calicut-Cannanore Railway, 62 miles; and in all probability a demand will also arise very soon for 164,000 sleepers for 74 miles of the Shoranur-Cochin Railway. The demand for Pyngadu (*Xylia dolabriformis*) from Burma is far in excess of the supply, so much so that the Burma firms were quite unable to supply the Bezwada-Madras Railway's requirements, and Deodar (*Cedrus deodara*) sleepers had to be got round from Kurrachi at a very high price, and the opening of the line has consequently been delayed by many months.

I hear that there are large quantities of timber fit for sleepers in the two forest divisions, North and South Malabar, not far from the Calicut-Cannanore Railway, and that not only is "maddi" (*Terminalia tomentosa*) found but also teak and other woods eminently fit for sleepers. I hear also that the Forest Department have machine saws working somewhere not far from Podanur whence Shoranur-Cochin and Podanur-Dindigul sleepers could perhaps be supplied.

But, however excellent and plentiful the timber may be in the forest, it is hopeless to expect to get it out, anything like fast enough or anything like honestly, through the agency of the petty sort of private enterprise that is available. It seems to me that the agency of the Forest Department might be made use of, and that Provincial finances might as well get whatever profit may accrue from the proposed expenditure of perhaps 3 to 5 rupees per sleeper.

Though nominally the work of a Railway Company, the Calicut-Cannanore Railway is really *de facto* a Government work, and it only seems right that all the help which the Forest Department can give should, under the circumstances, be given.

The Company's Agent is already enquiring into the price at which creosoted pine sleepers from Europe can be delivered. But it seems a pity to send to Europe for what we *ought* to be able, so far as I can learn, to obtain from the forests alongside of the railway through the agency of a Government department specially organized for such purposes.

Order—No. 544 Ry., dated 7th April 1898.

The Board of Revenue will report upon the subject and will advise whether any special steps should be taken or expenditure incurred to enable the Forest Department to meet the probable demand of 136,000 sleepers for the Calicut-Cannanore Railway in the next two years.

Proceedings of the Board of Revenue (Land Revenue).
Dated—7th May 1898, No. 204.

If the Forest Department is to make any special arrangements for the provision of sleepers, it is probable that a considerable initial expenditure will be involved, and the Board would be glad if some estimate could be given of the probable annual demand for sleepers for renewals at different centres, and the kinds of wood approved by the Railway authorities.

The woods which occur to the Board are:—

Teak	*Tectona grandis.*
Maddi	*Terminalia tomentosa.*
Ironwood—Irul	*Xylion dolabriformis.*
Vengai or Yegi	*Pterocarpus marsupium.*
Achca or Yepi	*Hardwickia binata.*
Sâl	*Shorea robusta.*
Sóme	*Soymida febrifuga.*
Manjakadambai or Rudrajanapa ...	*Adina cordifolia.*

Order—No. 715 Ry., dated 12th May 1898.

The Board will be informed that the quantity of metre gauge sleepers, which would probably be bought from the Forest Department if proper arrangements were made for their supply would, in round numbers, be as follows:—

For the Calicut-Cannanore Railway, 136,000, within say 3 years.
For the Shoranur-Cochin Railway, 164,000 ,, ,, 3 ,,

Future requirements for both railways, 10,000 annually to begin with, rising at the end of 10 years to 30,000 and standing thenceforth at that figure. It is hoped that this estimate will enable the Forest Department to make a forecast as to what it would be possible for it to do, in order that the Madras Railway Company may be able to come to such arrangements with them as will allow of the sleepers they require being obtained in the Presidency instead of from England.

Read—

* G.O., Nos. 841-42 Ry., dated 21st June 1898.
* G.O., No. 1141 Ry., dated 16th September 1898.

* [Note.—The orders marked with an asterisk have been communicated to Railway Administrations.]

Read also the following papers:—

From—the Conservator of Forests, Southern Circle.
To—The Secretary to the Commissioners of Land Revenue.
Dated—Coimbatore, 30th June 1898, Ref. on C. No. 4992.

With reference to the Board's Reference No. 184, dated 23rd April, regarding the supply of sleepers for the Calicut-Cannanore Railway, I have the honour to report having consulted the District Forest-officers, Nilgiris, North Malabar, South Coimbatore, South Malabar and South Canara on the subject. The two former District Forest-officers quote rates which are either altogether prohibitive or are so high as to leave but a small profit even if the sleepers are supplied at the rates which it is stated pine creosoted sleepers could be supplied at. I am, however, not quite satisfied that North Malabar could not supply *Terminalia tomentosa* at reasonable rates, as the rates quoted for sawing and carting by the Acting District Forest-officer appear very high and could possibly be reduced considerably if proper arrangements for procuring sawyers at reasonable rates as well as for carting the sleepers to the nearest Railway Station or water way were made. I therefore propose as soon as the permanent District Forest-officer, Mr. Tireman, returns from leave to ask him to go into the matter of rates thoroughly and report further. In the meantime, North Malabar may be omitted from our calculations.

2. The District Forest-officers, South Coimbatore, South Canara, and South Malabar, report the number of sleepers of each kind of timber they can supply as well as the lowest rates it would be advisable to accept. I give below a précis of their replies together with my recommendation regarding each proposal made.

Presuming the demand of the Calicut-Cannanore Railway amounting to 136,000 sleepers is spread over three years, this would give an annual demand of 44,000 sleepers to be met by the Department from three Districts or, say, roughly 15,000 sleepers per District if the indent was equally divided among the three. This, of course, is neither necessary nor advisable as the possibility of each district varies. Taking them therefore in the order of greatest possibility, South Coimbatore should supply the greatest number. The District Forest-officer states that given men and money he could supply 65,000 the first year and 100,000 the second, the sources of supply being so far as concerns the first year 15,000 from Tekadi leased forests, 25,000 from Pollachi Upper Anaimalai forests, and a similar number from Udamalpet Upper Anaimalai forests. In the 15,000 sleepers proposed for supply from Tekadi forests 2,500 Teak sleepers are included, which, however it would not pay us to supply as teak in the log will pay us much better than the price we could realize for it when sawn into sleepers. This would leave 12,500 sleepers to be supplied composed of *Terminalia tomentosa* and *Lagerstræmia microcarpa* in about the proportion of nine to four respectively. It is not certain that the Railway Company would accept the latter kind of wood although it should prove fairly suitable for sleepers. I shall therefore ask the District Forest-officer to send some sample sleepers to the Company for testing and opinion at once.

3. Passing on to the supply proposed from the Pollachi and Udamalpet forests the District Forest-officer's proposals are dependent in each of these cases on methods of transport which have not yet been tried there and in the case of Pollachi Forests which are not yet available. I refer of course to the new road now under construction to connect these forests with the plains and it is evident that without this road the supply of sleepers from the Upper Anaimalai forests could not be undertaken. I therefore put myself in communication with the Superintending Engineer regarding the time it would take to construct a cart-track suitable for our purposes of slow timber traffic down hill and I would specially invite reference to this correspondence as I regard the Superintending Engineer's last letter, dated 22nd June as very hopeful in so much as he states that "it would be *possible* to make the Prince of Wales Ghât passable for carts in a very short time, but it would involve very expensive work on the fourth and fifth miles. It might, however, pay to incur this expense to enable you to take up the contract for sleepers, and accept the risk of the Prince of Wales Ghât not being eventually selected as the best line for the cart-road." I am certainly of opinion that unless the very expensive work spoken of by the Superintending Engineer is prohibitively high it should be undertaken rather than allow an indefinite period to elapse before any road at all is available, and I would point out in this connection that even if this Prince of Wales Ghât road was not chosen as the final road to connect the evergreen forests near Sirukunru and Paraiai with the plains, other forests would be tapped by it or by branch cart-tracks from it, which the Department could construct and in this way it could not but prove remunerative and useful to the Department in the long run. I would, therefore, await an expression of opinion on this matter by the Board before replying to the Superintending Engineer. If however that officer could give an approximate figure as to what the cost of the heavy work on the fourth and fifth miles would be in order to make it passable for carts it would help us to come to a conclusion on this point. In the somewhat uncertain time therefore in which we may expect to utilize the new cart-road I think it would be wise not to rely on these Upper Anaimalai Pollachi forests for any supply during the first year, although it might be quite possible to bring down some sleepers towards the end of the official year, provided that arrangements can be made for Travancore or Palghat sawyers who would be required in some numbers for the work. As regards the supply from the Udamalpet Upper Anaimalai forests, the District Forest-officer contemplates utilizing the two rivers connecting the forests with the plains for the purpose of transporting sleepers, but as this means of transport in the locality is new I think it would be advisable not to rely on it for the present. In conclusion, therefore, I do not think that it would be wise to rely on a greater number of sleepers from South Coimbatore during the first year than the 12,500 to be obtained from the Tekadi leased forests, although it is quite possible that this number could be considerably increased from the Pollachi Upper Anaimalai forests, provided the cart-road is made available for slow down-hill timber traffic at an early date. During the second year I think we could with more certainty rely on the supply being largely increased from this source, although I doubt whether it would be possible to supply such a large

number as 25,000 as contemplated by the District Forest-officer when the difficulties of procuring transport and sawyer labour in an entirely new locality are taken into account. I therefore think that 10,000 sleepers would probably be as much as we might expect to supply the second year from these forests and this only provided subordinates possessing tact and interest in their work are employed on the work.

For South Coimbatore, therefore, I am of opinion that it would only be safe to rely on a supply of 12,500 sleepers the first year and 22,500 the second and possibly 30,000 the third.

4. As regards the supply that can be expected from South Malabar, the District Forest-officer of that District reports that he can supply 9,000 *Terminalia tomentosa* sleepers and 13,000 Irul (*Xylia dolabriformis*) during the next twelve months, but taking into consideration possible difficulty in procuring a sufficient number of sawyers during the first year of the work as well as possible loss in converting logs into sleepers over and above the percentage calculated I think it would be safer not to rely upon a greater number than 15,000 sleepers during each year from this District. But it must be pointed out that this number could be considerably increased if the Railway Company would accept sleepers of *Terminalia paniculata* which could moreover be supplied cheaper than either of the two other kinds of timber referred to. This can only be ascertained by sending the Railway Company some sample sleepers to test and examine, which I shall ask the District Forest-officer to do at once.

5. As regards the supply which may be expected from South Canara, the District Forest-officer reports that he can supply the following :—

	Rs.
1st Hopea parviflora	6,000
2nd Terminalia tomentosa	4,000
3rd Xylia dolabriformis	3.000
4th Lagerstrœmia microcarpa	2,000
Total ...	15,000

I think however for similar reasons as stated regarding the South Malabar supply that it would be better to reduce this number to 10,000 and that the reduction should as much as possible bear on the Hopea which is such a good wood and so easily disposable in the log that I am doubtful whether it would be justifiable to utilize it in large quantity for sleepers.

6. In conclusion, therefore, so far as numbers are concerned, I am of opinion that we might hope to supply 37,500 sleepers the first year and about 50,000 the second and third, which number would meet the whole demand so far as the Calicut-Cannanore Railway is concerned.

7. The next question relative to the supply is the rate at which we might expect to make it. The District Forest-officer, South Coimbatore, after going into the matter at some length proposes a rate of Rs. 3–8–0 made up of Rs. 1–6–0, actual cash disbursement per sleeper delivered in Coimbatore, Rs. 1–6–0 cost of establishment, elephants, annual lease amount of forests, &c., and As. 11–8 profit and to cover loss by rejection, &c.

I consider this amount rather low even for the smaller sleeper of $3\frac{1}{8}$ cubic feet when taking into consideration the excellent quality of timber we propose to supply, which for Indian underground purposes would probably be superior to creosoted pine sleepers. I therefore think a charge of Rs. 4–8–0 per smaller sleeper and Rs. 5–8–0 per larger one to be more reasonable; these rates moreover are more in accordance with those proposed by the District Forest-officers, South Malabar and South Canara who, however, do not differentiate between the two classes of sleepers when making their proposals on this point. If the Railway Company however would take *Terminalia paniculata* we could supply this wood at 20 per cent. below the above rates.

If the contract is taken up it will be necessary to make immediate arrangements for sawyers in each District. I would, therefore, request that orders may be passed as soon as possible in communication with the Railway Company. In the meantime I shall keep District Forest-officers informed what is being done in the matter.

8. The enclosure to the Board's Reference is herewith returned.

Enclosure No. 1.

From—The Conservator of Forests, Southern Circle.
To—The Superintending Engineer, IV Circle, Coimbatore.
Dated—30th May 1898, No. 4098.

I have the honour to enquire when a cart-road is likely to be commenced connecting Paralai with the Plains and when commenced how long (approximately of course) the cutting of it would take so as to admit of timber being brought down.

This information is asked for as it is under contemplation to supply a portion of the quantity of sleepers required by the Calicut-Cannanore Railway during the next three years from the Upper Anaimalai forests if the cart-road can be made use of during this period.

I understand from a communication (copy enclosed) from Mr. Loam, to the District Forest-officer, South Coimbatore, in reply to a similar query as that contained in this letter, that he has no orders to construct a cart-road but only to frame an estimate for one but that he is engaged in cutting a bridlepath to Sirukunru. I would beg to point out that the bridlepaths though very useful bring no direct return to Government, while from the day that a cart-road is opened connecting the forests with the plains some of the timber can be brought down and sold at remunerative rates which I estimate at from 6 annas to 1 rupee net per cubic foot.

From—The Superintending Engineer, IV Circle.
To—The Conservator of Forests, Southern Circle, Coimbatore.
Dated—7th June 1898, No. 334-M.

In reply to your No. 4098, dated 30th May 1898, I have the honour to inform you that the construction of a metalled cart-road for three and a half miles from the Aliar Crossing will be commenced, I trust, within the next three weeks. The Bridge across the Aliar will, it is hoped, be completed by this time next year.

2. From three and a half miles there are two possible routes to Sirukunru—one by the Prince of Wales Ghât and the water-fall estate and the other by the Villoni Valley. Before deciding which route would be the more favourable for a cart-road estimates have to be prepared, and they ought to be submitted in two months' time.

3. To complete a cart-road to Sirukunru by either route would probably take from three to four years. Government are anxious to have a good cart-road made with the least possible delay.

From—The Conservator of Forests, Southern Circle.
To—The Superintending Engineer, IV Circle, Coimbatore.
Dated—15th June 1898, Ref. on Cur. No. 4098.

With reference to paragraph 3 of your No. 334, dated 7th June 1898, I have the honour to enquire how long it would take to so far construct the road as to admit of carting of timber from the Forests to the plains, as this would only entail laden carts coming down hill.

It would be quite possible to utilize the road for timber down traffic before being metalled and widened to its full width, as a 10-feet unmetalled road would probably answer our purpose almost as well as a fully-metalled wide road which will be necessary for up-hill traffic.

I would, therefore, ask if it would not be possible to construct a cart-track of this nature in a somewhat shorter period than three or four years.

I ask for this information as I believe it would be almost possible for the Forest Department to recover a large portion of the expenditure on the road out of profits from supply of sleepers to the Calicut-Cannanore and other Railways if the road could be so far constructed at a somewhat earlier date so as to admit of slow timber traffic. The matter being of great importance to the Department with reference to timber sleeper supply contracts which will go elsewhere if not taken up by us is my reason for again troubling you for further information on the subject.

From—The Superintending Engineer, IV Circle.
To—The Conservator of Forests, Southern Circle, Coimbatore.
Dated—22nd June 1898, No. 363-M.

In reply to your No. 4098, dated 15th June 1898, I have the honour to inform you that it would certainly be possible to get the road ready for carts carrying sleepers down to the plains in a shorter time than three years.

2. As soon as the line for the cart-road has been definitely decided on every endeavour will be made to form a road which will answer your requirements without loss of time, as I fully appreciate the importance of the work.

3. I should be glad to know when you would be ready to begin carting sleepers. It would be *possible* to make the Prince of Wales Ghât passable for carts in a very short time, but it would involve very expensive work in the 4th and 5th miles. It might, however, pay to incur this expense to enable you to take up the contract for sleepers, and accept the risk of the Prince of Wales Ghât not being eventually selected as the best line for the cart-road.

Enclosure No 2.

From—The Executive Engineer on Special duty.
To—The District Forest-officer, South Coimbatore.
Dated—15th May 1898, No. 240.

With reference to your letter No. 497-Cur. (*b*), dated 9th May 1898, I have the honour to report that I am making a bridlepath to Sirukunru and have orders only to make estimates for a bandy road.

Endorsement by—The District Forest-officer.
Dated—23rd May 1898, Ref. No. C-497.

Forwarded to the Conservator of Forests for information; this is the reply to my query as to when carts would be able to get through.

Resolution—Forest No. 301, dated 21st July 1898.

In March last the Consulting Engineer for Railways brought to the notice of Government, in the Public Works Department, Railway Branch, that there was an immediate prospect of a very heavy demand for Railway sleepers in connection with the construction of the line from Calicut to Cannanore and afterwards that from Shoranur to Cochin. He represented that the demand for Pyngadu (*Xylia dolabriformis*) from Burma was far in excess of the supply, and that as large quantities of timber fit for sleepers are said to exist in the North and South Malabar forest Divisions, it would be a pity to ignore the agency of the Forest Department in the matter of this supply and to obtain creosoted pine sleepers from Europe. In its order, No. 544, Railway, dated 7th April 1898, the Government enquired of the Board whether any special steps should be taken, or expenditure incurred, to enable the Forest Department to supply about 136,000 sleepers for the Calicut-Cannanore Railway in the next two years.

2. The Board referred the matter to the Conservator of Forests, Southern Circle, for report, but as the undertaking was one which would involve considerable initial expenditure from forest funds, it desired the Railway Branch of the Public Works Department to furnish an estimate of the probable annual demand for sleepers for renewals at different centres and the kinds of wood approved by the railway authorities. The Board at the same time specified the marginally-noted woods which occurred to it as suitable for the purpose and in a separate communication added *Mesua ferrea* or *speciosa*. The Railway Branch replied that the quantity of metre gauge sleepers which would probably be bought from the Forest Department for the Calicut-Cannanore line within, say, three years would amount to 136,000 sleepers, and those for the Shoranur-Cochin line, within the same period, to 164,000, and that the future annual requirements would amount to 10,000 sleepers for both railways, rising eventually to 30,000 sleepers at the end of ten years. The Board forwarded this reply to the Conservator of Forests, Southern Circle, and at the same time requested the Railway Branch to furnish an estimate of the probable demand for renewals in the Madras, South Indian and East Coast Railways. The reply to the latter reference has not yet been received.

Teak	*Tectona grandis.*
Maddi	*Terminalia tomentosa.*
Ironwood (Irul) ...	*Xylia dolabriformis.*
Vengai or Yegi ...	*Pterocarpus marsupium.*
Achea or Yepi ...	*Hardwickia binata.*
Sál	*Shorea robusta.*
Sóme	*Soymida febrifuga.*
Manjakadambi or Rudrajanapa.	*Adina cordifolia.*

3. The paper last read above is the Conservator's reply to the references made to him. Mr. Brasier states that he has consulted the District Forest-officers of the Nilgiris, North Malabar, South Coimbatore, South Malabar and South Canara. He considers that the rates quoted by the District Forest-officers of the first-named two forest divisions are either altogether prohibitive or so high as to leave but a small margin of profit, even assuming that the railways would pay as much as they would for creosoted pine sleepers. He is, however, of opinion that from North Malabar *Terminalia tomentosa* can be supplied at a much lower price than that given by the District Forest-officer by a possible reduction in the rates for sawing and carting, and the Board notes that the matter is engaging the Conservator's attention. Leaving, however, these two forest divisions out of account, Mr. Brasier hopes that the estimated quantity of 136,000 sleepers for the Calicut-Cannanore Railway can be met from the remaining three divisions at 37,500 sleepers during the first year and about 50,000 during each of the following two years.

4. As regards the rate, Mr. Brasier proposes to charge Rs. 4-8-0 per smaller sleeper and Rs. 5-8-0 per larger one. He has not named the stations at which he would deliver the supply at the proposed rates except in the case of sleepers from the South Coimbatore division, which it is said will be delivered at Coimbatore, by which is probably meant the Podanúr Railway station. The sleepers from South Malabar will no doubt be delivered at Calicut, and those from South Canara at such port as may be most convenient to the Railway Company. Mr. Brasier states that the rates proposed by him are more in accordance with those suggested by the District Forest-officers of South Malabar and South Canara, whereas the rate of Rs. 3-8-0 quoted by the District Forest- fficer, South Coimbatore, is low even for the smaller sleepers, considering that the quality of timber which it is proposed to supply is excellent. The Board considers that Mr. Brasier's rates are reasonable. Apart from the question of the excellence of the timber the Board does not consider that it would be safe to undertake the work at the rates proposed by the District Forest-officer, South Coimbatore. Some of the localities to be worked are isolated and have to be newly opened out, and there may be difficulties with regard to sawyers and carriage involving revised rates as well as the appointment of additional supervising establishments.

5. Mr. Brasier's remarks and conclusions with regard to the quantities that can be supplied from each of the forest divisions of South Coimbatore, South Malabar and South Canara will now be considered. Taking South Coimbatore, the District Forest-officer is of opinion that, given men and money, he could supply 65,000 sleepers the first year and 100,000 the second year. He expects to supply during the first year 15,000 sleepers from the Tekadi leased forests, 25,000 from the Pollachi Upper Anaimalai forests, and 25,000 from the Udumalpet Upper Anaimalai forests. The District Forest-officer's estimate of the proposed supply from the Tekadi forests includes 2,500 teak sleepers. Mr. Brasier rightly thinks that teak would fetch better prices if sold in the log than when converted into sleepers. He would accordingly deduct 2,500 from the number proposed by the District Forest-officer. The balance, viz., 12,500 sleepers, is composed of *Terminalia tomentosa* and *Lagerstræmia microcarpa* in about the proportion of 9 to 4, respectively, and the Board notes that the Conservator is arranging to ascertain the opinion of the railway authorities as to the quality of this latter wood after test. As regards the supplies from the Pollachi and Udumalpet forests, Mr. Brasier considers that the difficulty of transport largely discounts the sanguine view of the District Forest-officer. The supply from the Pollachi Upper Anaimalai forests is dependent on the completion of the road now in course of construction in connection with the grant of leases for planting in the Anaimalai forest reserve. It seems that it would be possible to make the Prince of Wales Ghaut passable for carts in a very short time, but a large expenditure would have to be incurred on the 4th and 5th miles. Apart from the uncertainty as to whether this Ghaut will eventually be selected as the best line for the cart road to connect the evergreen forests near Sirukunru and Paralai with the plains, Mr. Brasier considers that unless the very large expenditure said to be necessary for this work is regarded as prohibitive, it might be undertaken rather than have no road at all for an indefinite period. In his opinion the Prince of Wales Ghaut road would prove useful and remunerative as other forests would be tapped by it or by branch cart-tracks from it which the Department could construct. The Board trusts that by the time the railway is in a position

to give definite orders for the supply of sleepers, the Superintending Engineer will have decided on the line which the new cart road should take, or if this is not possible, he could frame an estimate showing the probable cost of rendering the Prince of Wales Ghaut fit for cart traffic. Owing to the difficulty of transport from the Pollachi Upper Anaimalais forests as well as from the Udumalpet Upper Anaimalais where the method of transporting the wood by rivers has yet to be tried, Mr. Brasier thinks it wise not to calculate on any supply from these forests during the first year. In the second year a supply would no doubt be obtained from the Pollachi Upper Anaimalais, but when the difficulties of procuring transport and sawyer labour in an entirely new locality are considered, Mr. Brasier doubts whether a supply of 25,000 sleepers could be relied on and thinks that the figures might be taken at 10,000; to procure even this number it would in his opinion be necessary to employ subordinates possessing special tact and interest in the work. In the third year the number might be raised to 17,500, making 30,000 in all from South Coimbatore. The wood of which the sleepers from the Pollachi Upper Anaimalais would be made is not stated, but from other correspondence on the subject there is no doubt that it is *Mesua ferrea* or *speciosa*.

6. In South Malabar, the District Forest-officer estimates a supply of 9,000 sleepers of *Terminalia tomentosa* and 13,000 of *Xylia dolabriformis* during the next twelve months. Taking into account the difficulty of procuring a sufficient number of sawyers during the first year of the work and the possible loss in converting logs into sleepers over and above the percentage calculated, Mr. Brasier relies upon a supply from this division of 15,000 sleepers annually. He adds that this number could be considerably increased if the Railway Company would accept sleepers of *Terminalia paniculata* which could be supplied at rates 20 per cent. cheaper than those given above. It is noted that arrangements are being made to test the usefulness of this wood as a railway sleeper. For reasons similar to those adduced for South Malabar, Mr. Brasier reduces the estimate of the District Forest-officer, South Canara, from 15,000 to 10,000 sleepers.

7. To sum up, the proposals for supply are as follows:—

—	*Terminalia tomentosa.*	*Xylia dolabriformis.*	*Mesua ferrea or speciosa.*	*Lagerstræmia microcarpa.*	*Hopea parviflora.*
South Malabar—					
First year	5,000	10,000	..	..	..
Second year	5,000	10,000	..	..	..
Third year	5,000	10,000	..	..	..
South Coimbatore—					
First year	7,500	..	..	4,500	..
Second year	7,500	..	10,000	4,500	..
Third year	7,500	..	17,500	4,500	..
South Canara—					
First year	4,000	3,000	..	2,000	1,000
Second year	4,000	3,000	..	2,000	1,000
Third year	4,000	3,000	..	2,000	1,000
Total ..	49,500	39,000	27,500	19,500	3,000

Terminalia tomentosa	49,500
Xylia dolabriformis	39,000
Mesua ferrea	27,500
Lagerstræmia microcarpa	19,500
Hopea parviflora	3,000
Total ..	138,500

From the Consulting Engineer's note recorded in Government Order, No. 841 Ry., dated 21st June 1898, and from Gamble's Manual of Indian Timbers there can be no doubt as to the suitability of *Xylia dolabriformis* and *Mesua ferrea* or *speciosa* for the manufacture of sleepers, and the same may probably be said of *Hopea parviflora* though the Board has no information of any experiment having actually been made. With regard to *Terminalia tomentosa*, definite information can probably be obtained from the Northern Bengal State Railway, who are said, by Gamble, to have made experiments on a considerable scale in 1876. *Lagerstræmia microcarpa* does not seem to have been tried for sleepers anywhere but it is a favourite wood for building on the West Coast.

If all the timbers above mentioned be accepted and the road to the Pollachi Upper Anaimalai forests be pushed on with, the Board considers that Government may safely undertake the supply, by the Forest Department, of all the sleepers required for the Calicut-Cannanore Railway, and possibly some, if not all, of those required for the other extensions mentioned by the Consulting Engineer as likely to be taken in hand at an early date, but the result of the first year's working must be awaited before any further definite proposals can be submitted. As has been represented in Board's Proceedings, No. 227, dated 11th June 1898 the completion of the Anaimalai Ghaut road is a matter of prime importance in connection with the provision of railway sleepers, the supply of suitable timber in that locality being practically unlimited.

G.O., No. 1141, Railway, 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, Railway, dated 7th April 1898, gave quotations for two sizes of sleepers, and the Board assumed that the smaller of these, viz., a sleeper of $3\frac{1}{8}$ 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, Railway, dated 16th September 1898, it would appear that the size required is either that used by the South Indian Railway, viz., 6′ 6″ × 9″ × $4\frac{1}{2}$″ or that proposed for the Shoranur-Cochin Railway, viz., 6′ × 8″ × $4\frac{1}{2}$″. 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″ × 9″ × $4\frac{1}{2}$″ which, it is observed, is the rate that has been paid by the South Indian Railway for Irul sleepers. The price per sleeper 6′ × 8″ × $4\frac{1}{2}$″ 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 Tinnevelly-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 Tinnevelly 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.

Order—No. 1311, Railway, 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″ × 9″ × 5″, with as a minimum 8′ 11″ × 8″ × 5″, and for metre gauge 6′ 0″ × 7″ × 4½″ with as a minimum 5′ 9″ × 6″ × 4″.

Enclosure.

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. Numerious 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 strengh have been determined by the following experiments—

			Weight.	Value of P.
			LB.	
A. Mendis—Ceylon No. 59, with bars 2′ × 1″ × 1″	...	found	72	994
Brandis—Burma, No. 18, 1862,	... ...	,,	69	...
Bennett—Andamans, No. 4, 1872,	... ...	,,	70	1,053
Smythies (Assam (4 specimens) 1878,	... ...	,,	67·5	...
Smythies (Kanara (1 specimen)	,, ...	,,	62	...
Smythies (Burma (6 specimens)	,, ...	,,	70	...

Several of our specimens, however, reached 74 to 76 lb. per cubic foot in weight. It is very durable. It has been found to answer for sleepers equally well with Pynkado, 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.

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

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.

Resolution of the Board of Revenue, dated 7th January 1899, Forest No. 17.

Communicated to the Conservator of Forests, Southern Circle, and the Collectors of Coimbatore, Malabar and South Canara whose special attention is drawn to the remarks of Government regarding the development of the market for railway sleepers.

The Board understands that trees were felled in several districts some time ago in view to the manufacture of railway sleepers, but definite information as to the size of the sleepers required for the proposed new railways is still awaited. The sizes required for annual renewals on the Madras and South Indian Railways are given in Government Order, No. 1141, Railway, dated 16th September 1898.

Read—G.O., No. 53 Ry., dated 11th January 1899.

[This order has been communicated to Railway Administration.]

Resolution of the Board of Revenue, dated 3rd February 1899, Forest No. 65.

From the papers read above there seems reason to believe that the forests of the Madras Presideney are capable of supplying a considerable proportion of the sleepers required for the Railway extensions now under contemplation as well for annual renewals on the existing lines, and Government has directed that all that is possible shall be done to develop the market for railway sleepers.

2. Conservators or, in cases in which it may be more convenient, District Forest-officers, should place themselves in direct communication with the Chief Engineers of the different railways in view to obtaining any information regarding requirements which cannot be found in the orders of Government which have been communicated to them.

3. The Board concurs with the Chief Engineer of the Madras Railway in considering that it must be clearly understood that sleepers supplied by the Forest Department will be subject to the conditions of ordinary contracts and should be in accordance with specification, and subject to rejection if considered unfit for use and not up to specification. It has also no objection to the condition that the officers of the railway concerned shall be sole judges in this respect, if it be understood that rejections by a subordinate officer shall, if necessary, be subject to revision by the head of his department.

4. As District Forest-officers will have difficulty in finding time to devote personal supervision to all the details of operations on a large scale, the Board considers that endeavours should be made to secure the services of trustworthy, and, if possible, experienced contractors who could work under conditions prescribed by the District Forest-officer. The officers of the railway administration may be in a position to assist in this matter.

5. The main object in view is the utilization of local resources, and the consequent retention in the country of large sums of money which must otherwise be sent out of it. To this the Board attaches very great importance and it may be understood that there will be no difficulty in obtaining sanction to any well-considered schemes for expenditure in opening out markets which are at present closed for want of facilities for transport or manufacture.

Order—No. 342 Ry., dated 27th March 1899.

A copy of these Proceedings, containing the Board of Revenue's Resolutions, Forest Nos. 17, dated 7th January 1899, and 65, dated 3rd February 1899, will be communicated to railway administrations for information.

2. It is the desire of Government that the Railway Companies should make every endeavour to place the Forest-officers in possession of sufficient information, well in advance, so as to enable local sleepers to compete on equal terms with Burma or Australian or English supplies. It is now the definite policy of Government to endeavour by all practicable means to meet the demand for railway sleepers, at first to a somewhat limited extent until the local forests get opened out, but later on more fully.

3. A copy of these Proceedings will be forwarded to the Government of India.

[Here enter No. 343 Ry., dated 27th March 1899.]

(True Extract.)

Francis J. E. Spring,
Joint Secretary.

To the Agent, Madras Railway.
" Agent, South Indian Railway.
" Agent, His Highness the Nizam's Guaranteed State Railway.
" Manger, East Coast Railway.
" Board of Revenue.
" Revenue Department.
" Consulting Engineer for Railways.

Endorsement—No. 343 Ry., dated 27th March 1899.

Forwarded.

(By order.)

Francis J. E. Spring,
Joint Secretary.

Exd. T. K. Narayana Aiyangar.

Public Works (1899) Department.

Railway

CURRENT No. 585

SERIAL No. 46

B (Misc)

B/

From The Govt. of India

Order No. 516 Ry dated 3/5/99

A copy of this letter will be forwarded to the Board of Revenue and to the Con. Eng. for Ry. and to the Agents Madras & S. I. Ry. Co. for information with reference to G. O. No. 342 Ry. dated the 27th March 99

FWs
R
28/4/99

To the Board of Revenue through the Rev Deptd } Desptd 3/5/99
" Agents Madras Ry
" " S. I. Ry } Desptd 3/5
" Consg Engr for Railways

No. 523 RS.

Dated 13th April 1899

Received }
Registered } 26.4.99

Enclosures 1

Spare copies

SUBJECT.

Timbers suitable for Ry sleepers re

Forwarding a copy of a circular letter from the Inspector Gl of Forests to conservators of Forests re: the supply of timber for Ry purposes, & fuel & requesting to suggest to the Agents to use their best endeavours to obtain as much timber, sleepers & fuel for the use of their lines from the Forest Department as possible in preference to private agencies whenever it is in the interests of the Coy: to do so.

BACK PAPERS.

No.	Date.

FURTHER PAPERS.

No.	Date.

No. 523 R.S.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

RAILWAY STORES.

To

THE JOINT SECRETARY TO THE GOVERNMENT OF MADRAS, PUBLIC WORKS DEPARTMENT, RAILWAY BRANCH.

THE SECRETARY TO THE GOVERNMENT OF BOMBAY, PUBLIC WORKS DEPARTMENT, RAILWAY BRANCH.

THE SECRETARY TO THE GOVERNMENT OF BENGAL, PUBLIC WORKS DEPARTMENT.

THE SECRETARY TO THE GOVERNMENT OF BURMA, PUBLIC WORKS DEPARTMENT, RAILWAY BRANCH.

THE CONSULTING ENGINEERS TO THE GOVERNMENT OF INDIA FOR RAILWAYS, CALCUTTA, LUCKNOW, AND ASSAM.

Simla, the 13th April 1899.

Timbers suitable for railway sleepers, etc.

SIR,

I am directed to forward herewith a copy of a circular letter No. 3, dated the 3rd February 1899, from the Inspector General of Forests, to Conservators of Forests, regarding the supply of timber for railway purposes and fuel, and to request that you will suggest to the Agents of the Companies' Railways under your control that they will use their best endeavours to obtain as much timber, sleepers and fuel for the use of their lines from the Forest Department as possible, having recourse to this source of supply in preference to private agencies whenever it is in the interests of the Company to do so.

I have the honour to be,

SIR,

Your most obedient servant,

C. S. Cole.

Offg. Under Secretary.

Documents accompanying.

Copy of circular referred to.

G. C. Press, Simla. No 2374 P. W. D.—15-4 99.—260.

To The Joint Secretary to the Govt of Madras
Public Works Department
Railway Branch.
with 50 spare copies (sent per Book Post)

Enclosure to Government of India, Public Works Department, No. 523-R. S., dated 13th April 1899.

Circular No. 3, dated Calcutta, the 3rd February 1899.

From—B. RIBBENTROP, Esq., C.I.E., Inspector General of Forests to the Government of India,

To—All Conservators of Forests.

I have the honor to inform you that it has been arranged with the Public Works Department of the Government of India that this office shall, in future, be supplied with early information regarding the requirements of all State Railways in India for sleepers, timber, fuel, etc. In return I have undertaken to supply that Department with the following particulars :—

(1) Names of timber depôts belonging to the Forest Department in every province, and the Civil District in which each depôt is situated. (Where there are no Government timber depôts, the names of central places where timber and sleepers might, if necessary, be arranged for may be given.)

(2) Distance of depôt from railway station.

(3) Cost of carriage per cubic foot from depôt to railway station.

(4) Species of timber available.

(5) Probable annual supply available, or which would be arranged for, of wood fit for sleepers.

(6) Prices of broad and narrow gauge sleepers.

I beg therefore that you will be good enough to furnish me, as soon as possible, with the above information for your Circle.

G. C. Press, Simla.—No. 2374 P. W. D.—15-4-99.—260.

21/[illegible] 585/99

Public Works (1899) Department.

RAILWAY BRANCH.

CURRENT No. 1508

From Director of Railway Construction

Order No. 1403 Ry dated 6.12.99.

Communicated to the Board of Revenue, to the Consulting Engineer for Rys & to the Agents, Madras & S. I. Ry Cos. for information in continuation of G.O. No. 546 Ry of 3rd May 1899.

[illegible]

No. 2089.R.S.

Dated 9-11-99
Received
Registered 2-12-99
Enclosures
Spare copies.

SUBJECT.

Supply of Railway Sleepers

Forwarding a Statement containing the promised particulars re: the —— by the forest Deptt

To the Board of Rev: thro' the Rev Deptt.
— Agent & man. Madras Ry
— Agent S. I. Ry
— Consg Engr for Rys

Despatched on 7/12/99